TECHNOLOGY DEPT.

NOVEMBER 1950

The Paper Industry

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DETROIT

Nalco #680
STABILIZED Sodium Aluminate

100% Soluble
100% Stable • 100% Available

NALCO 680 is *completely* soluble, *completely* stable... the one sodium aluminate that remains in solution as sodium aluminate and does not settle out.

Every ounce of Nalco 680 provides active alkaline alumina... always available for rapid reaction. That means reduced alum requirements, lower acidity, better sizing, better retention, and therefore, better products.

Read the results reported at right—then ask a Nalco Representative to show you how Nalco 680 can repeat them in your mill.

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"Machine tenders report much better sheet formation with Nalco 680, and that jordans can be cut back 10 amps. Machines are cleaner with no deposits on cylinders."

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SULFITE BOND MILL—45% Less Alum

"Results using Nalco 680 at the rate of five pounds per ton have been good. Improved sizing and reduced alum from 250 to 140 pounds per 4500 pounds of furnish. This enabled the mill to meet rigid pH specifications for the paper."

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"No. 6 paper machine remaining clean and generally good results through the use of Nalco 680 applied at the rate of four pounds per ton."

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TAMOL N—for effective pitch control—a dispersing agent for pigments.

TRITONS—surface-active agents that increase absorbency and softness, stop foaming, rewet gummed tape.

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HYAMINES—deodorants for paperboard and bactericides for glue.

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THE RESINOUS PRODUCTS DIVISION

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*T.M. Reg.— Curlator Corporation, Rochester, N. Y.

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Stable, non-hygroscopic, water-soluble Mathieson Sodium Chlorite is available for industrial use as a dry, straw-colored crystalline powder packed in 100 lb. drums. The new form—a 50% aqueous solution—is available in tank car quantities. Write today for complete information, samples and prices. Mathieson Chemical Corporation, Mathieson Building, Baltimore 3, Maryland.

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The Paper Industry

Technology • Engineering • Management • Production

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THE PAPER INDUSTRY is indexed regularly in **Engineering Index** and **Industrial Arts Index**. An index to each volume is issued annually by the publisher as a part of the April number.

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Our technical staff will be glad to help you select the proper dyes with careful consideration given to your specific requirements. Write: E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

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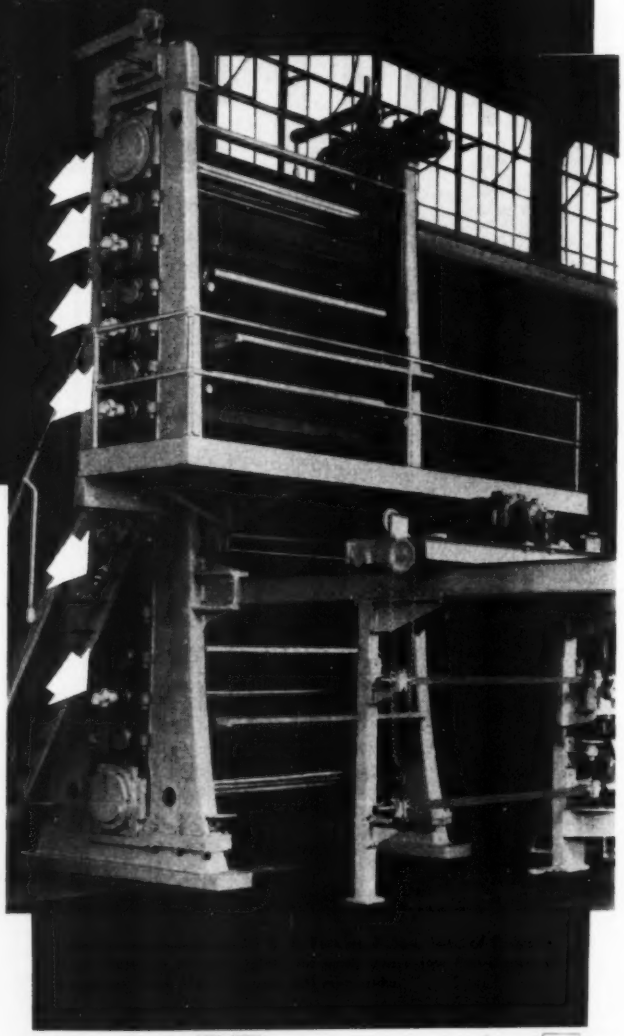
the final touch to fine machinery

.... On this PERKINS CALENDER



There are many distinctive features that B. F. Perkins & Son, Inc., can point out on this new calender. One thing we'd like to point out is the use of Johnson Rotary Pressure Joints.

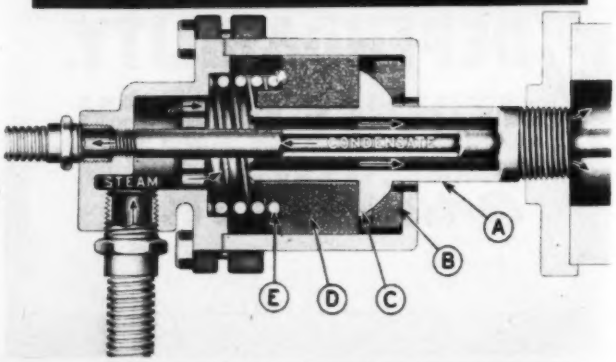
It's a practice with which practically all machinery manufacturers agree. Years of service have shown that any paper machine, calender or corrugator is *better* machinery when equipped with packless, self-lubricating, self-adjusting Johnson Rotary Pressure Joints.

With the Type S Johnson Joint this is truer than ever before. Completely self-supporting, the Type S is the final answer for tough service such as encountered on calenders. It shifts as the roll shifts —ends completely the troubles and rapid wear that come with misalignment.

Remember, Johnson Joints can save their cost in reduced maintenance alone. Write for new catalog, showing types, sizes, styles for every need.

Type S—Stops Misalignment Cold!

Nipple (A) is attached to roll, has convex hemispherical collar (C) which rotates against machined surface of special carbon-graphite seal ring (B). Guide (D) is also of long-lived, self-lubricating carbon-graphite, is fitted carefully into the body. Spring (E) is for initial seating only; pressure within the Joint is the actual sealing force. The Type S becomes a part of the roll—shifts with the roll—cannot get out of alignment.



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Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
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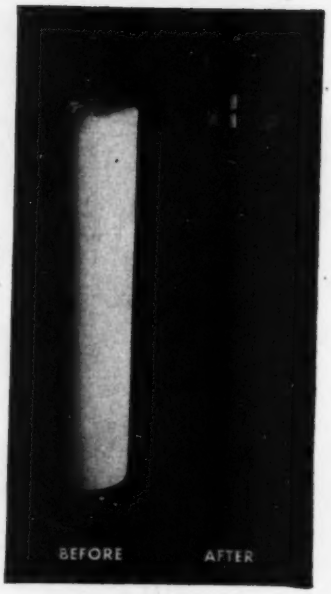
IF YOU HAVE A

stream pollution PROBLEM

LOOK AT THESE BEFORE-AND-AFTER PICTURES

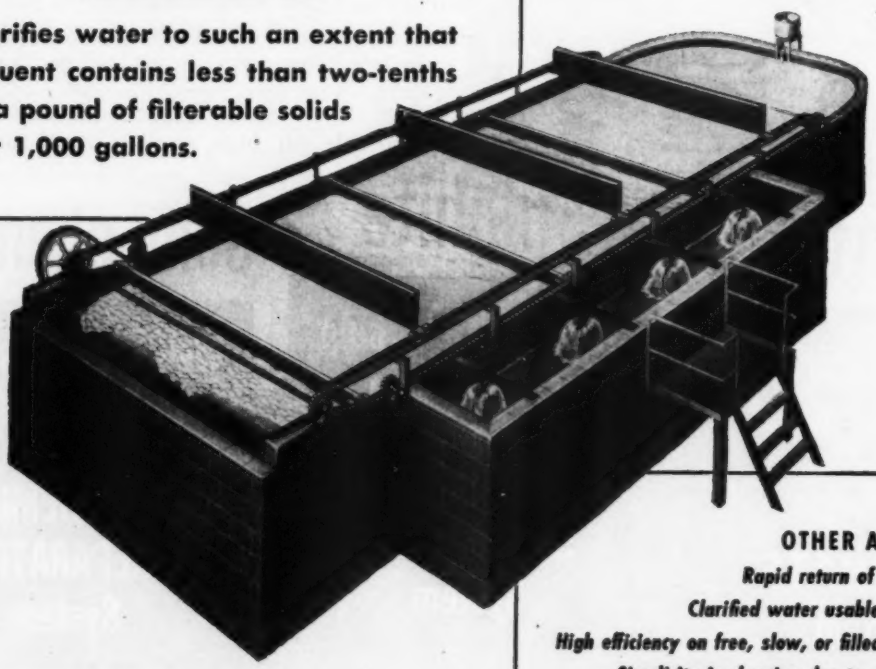


SVEEN PEDERSEN

FLOTATION

SAVEALL

Clarifies water to such an extent that effluent contains less than two-tenths of a pound of filterable solids per 1,000 gallons.



OTHER ADVANTAGES:

Rapid return of recovered fibers.

Clarified water usable in many places.

High efficiency on free, slow, or filled stock furnishes.

Simplicity in cleaning due to open construction.

Low maintenance costs—no screens, few moving parts.

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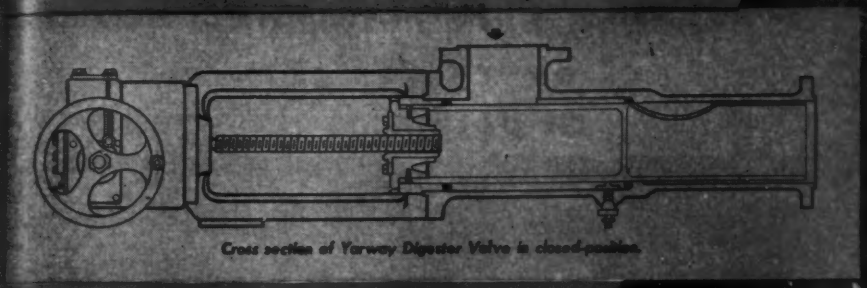
416 WELLINGTON STREET, OTTAWA, ONTARIO

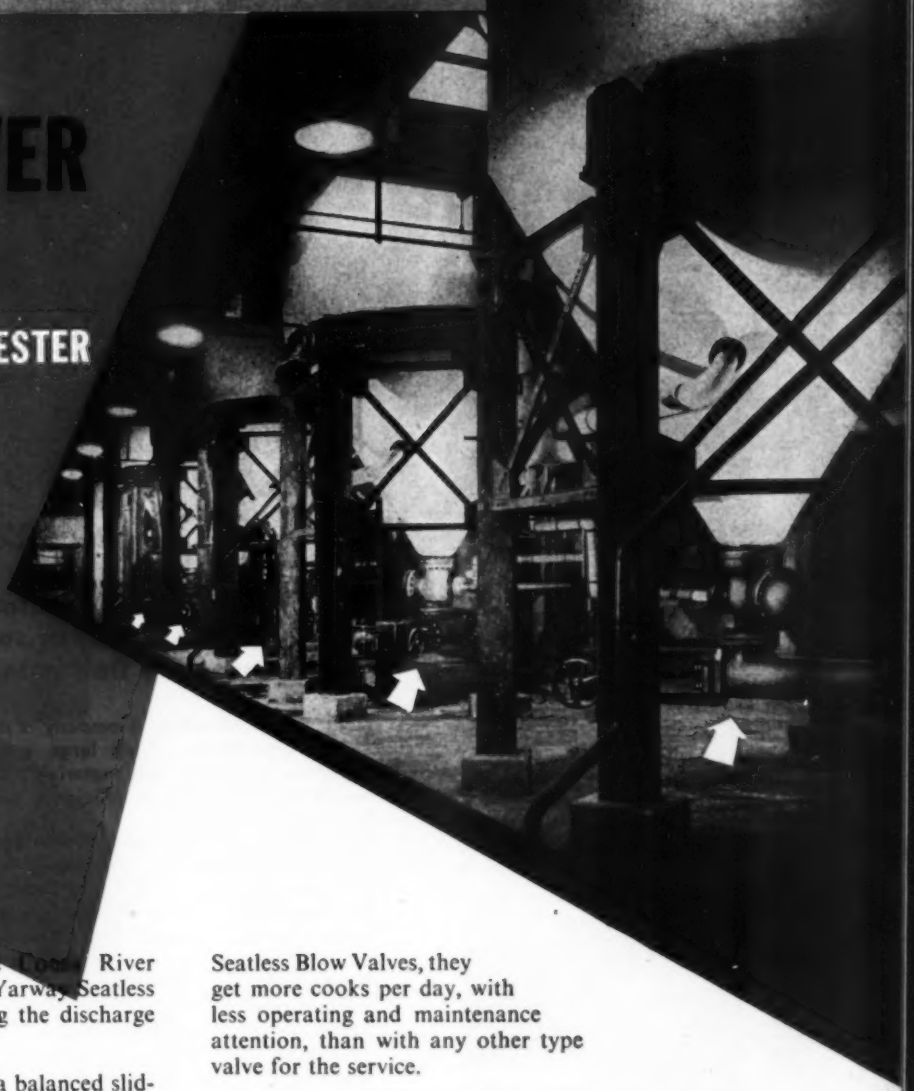


Cross section of Yarway Digester Valve in closed position.

COOSA RIVER *Uses*

YARWAY SEATLESS DIGESTER BLOW VALVES FOR...

- TIGHT SHUT-OFF
- FREE DISCHARGE
- LOW MAINTENANCE
- FAST OPERATION
- REMOTE CONTROL



● At the vast new plant of the Coosa River Newsprint Co., in Alabama, six 8" Yarway Seatless Digester Blow Valves are controlling the discharge from pulp digesters.

Their unique seatless principle, with a balanced sliding plunger, permits tighter shut-off, free discharge with no "hung-up" solids, and low maintenance.

Motor control permits fast operation by push button at any remote spot, usually the charging floor.

Other mills report that by using Yarway Digester Seatless Blow Valves, they get more cooks per day, with less operating and maintenance attention, than with any other type valve for the service.

For full details and specifications call your nearest Yarway office or write for Yarway Bulletin B-440.

YARNALL-WARING COMPANY
149 Mermaid Avenue, Philadelphia 18, Penna.
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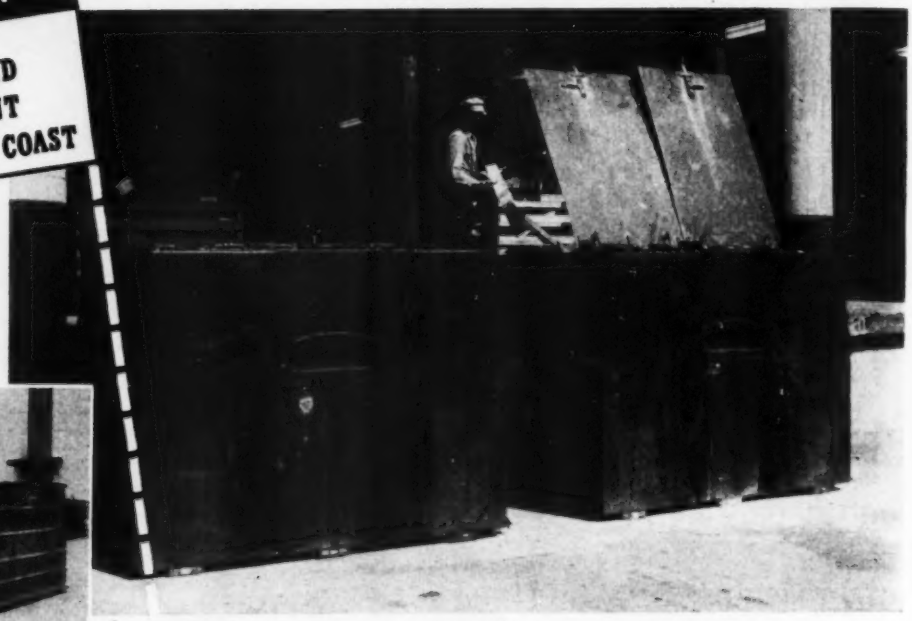
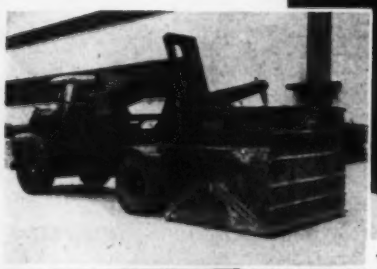
YARWAY **DIGESTER VALVES**

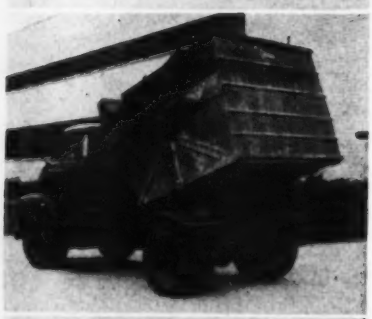
DEMPSTER DUMPSTER SYSTEM

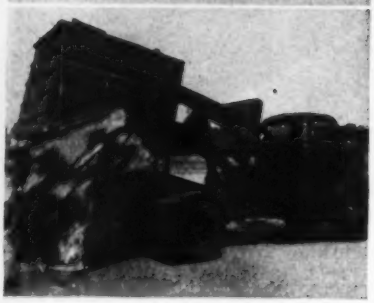
SERVING COST-MINDED MANAGEMENT FROM COAST TO COAST

. . . handling bulk materials of every description at phenomenal savings









—recognized across the nation

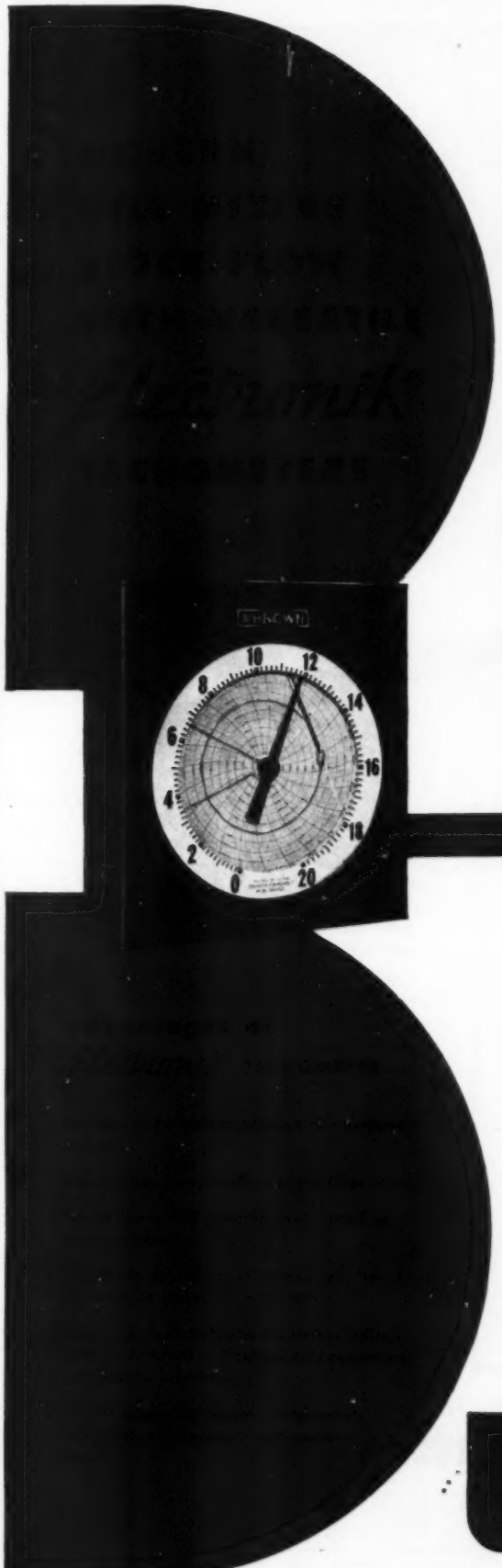
. . . Colgate-Palmolive-Peet Company, well known for sound management, uses the Dempster-Dumpster System.

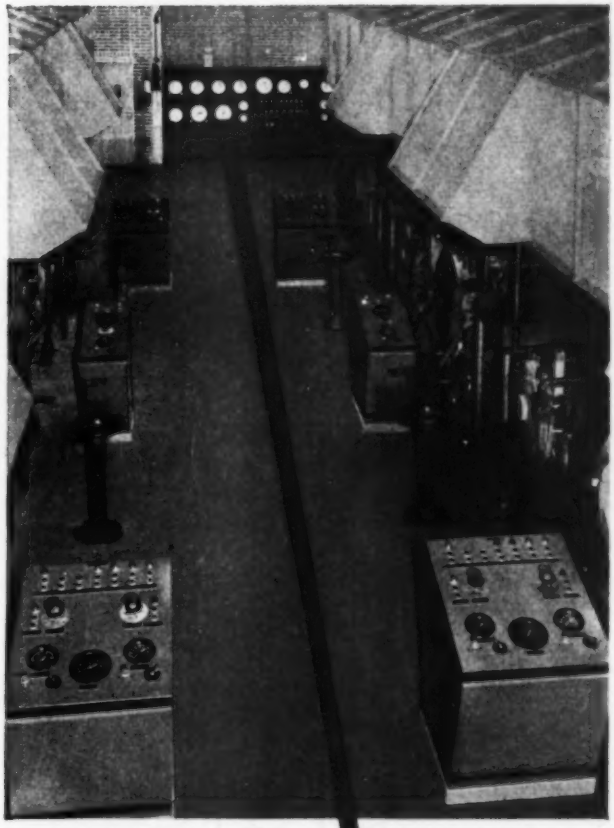
Colgate-Palmolive-Peet Company is among the hundreds of well managed manufacturers, both large and small, who use the Dempster-Dumpster System of bulk materials handling . . . the system recognized across the nation for its efficiency and ability to reduce costs.

You will cut cost of equipment and operation . . . you will eliminate standing idle time . . . you will eliminate re-handling of materials . . . and you will increase efficiency and good "housekeeping" by installing the Dempster-Dumpster System in your plant now! In this system, one truck-mounted Dempster-Dumpster services any required number of detachable containers—and each suited to the particular materials handled—be they bulky, light or heavy . . . solids, liquids or dust . . . trash or rubbish. Large photo above shows how containers are placed at convenient materials accumulation points and are preloaded, in this case, with waste materials. With only one man, the driver, the truck-mounted Dempster-Dumpster picks-up, hauls and dumps one pre-loaded container after another, as illustrated in three photos at left. It will pay you to investigate the Dempster-Dumpster System now! A product of Dempster Brothers, Inc.

One Dempster-Dumpster Services All Containers. . . All Designs. . . All Sizes

DEMPSTER BROTHERS, 7110 Dempster Building, Knoxville 17, Tennessee





Stock Washers at Coosa River Newsprint Mill. Main Washer Panel includes ElectroniK Tachometers used as Stock Meters.

MANY paper mills are finding it increasingly valuable to accurately measure and record a great variety of speeds . . . all of which can be profitably handled with the versatile *ElectroniK* recorder. Although tachometers generally are considered only in terms of measurement of machine speeds . . . the *ElectroniK* principle permits a flexibility in application which includes measurement of stock volume, speed differentials and ratios, paper breaks and draws, as well as conventional speed in feet per minute.

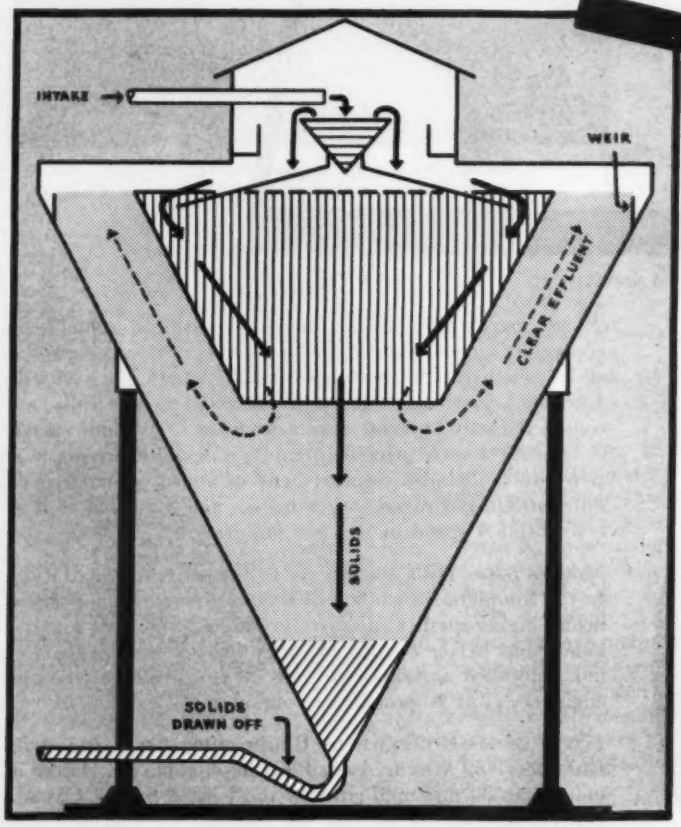
Modern paper mills are turning to Brown Instrumentation. In the complete Brown line there are instruments which will insure higher quality, uniform production, reduced maintenance and better control of every important process. For more detailed information, call in your local Honeywell engineer . . . he is as near as your phone!

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4489 Wayne Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS

TEXAS PAPERBOARD PLANT CHECKS THE ADVANTAGES OF THEIR MARX SAVEALL

- Each ton of solids recovered from waste water means an $18.00 saving.
- Water used in the process can be reused over and over again.
- All flotation scum is separated for easy disposal into the sewer.
- The Marx Saveall provides additional water storage capacity.



AT the Dallas, Texas, plant of Fleming & Sons, a Marx Saveall proved 95 per cent efficient in recovering fiber carried over from the paperboard making operation in the white water effluent. The 3.3 lbs. of fiber per 1000 gals. that formerly had gone into the sewers is now recovered and transferred into new profits for this paperboard manufacturer.

The thorough, yet economical, process involved requires no chemicals or moving parts. The Marx Saveall consists primarily of two large cones made of plate steel, one mounted inside the other. White water from the paperboard machine is fed into the receiving well at the top of the unit. It then overflows on to a deaeration plate where air bubbles are shaken loose from the solid particles. Suspended fibers settle through the inside cone and collect at the bottom of the outside cone. The clear water rises between the two cones and flows over a circular weir into a draw off channel. The settled solids are drawn off through a pipe at the bottom of the outside cone.

For more information or quotations, write our nearest office.

CHICAGO BRIDGE & IRON COMPANY

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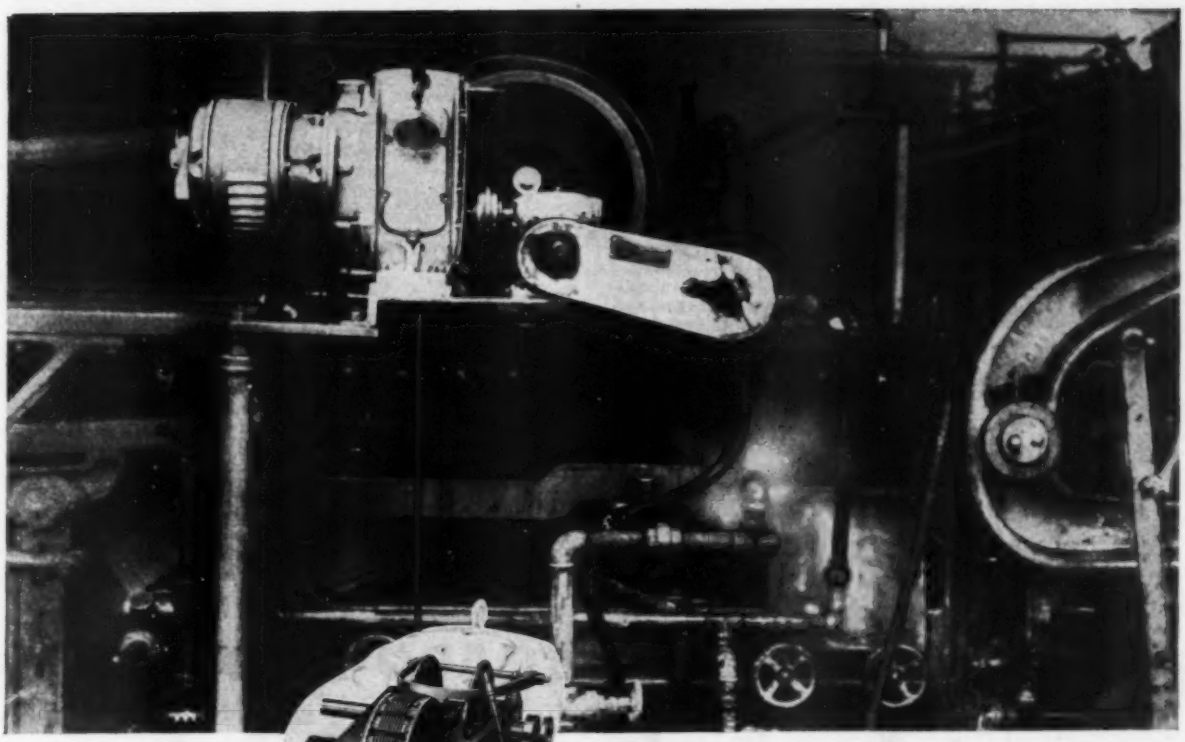
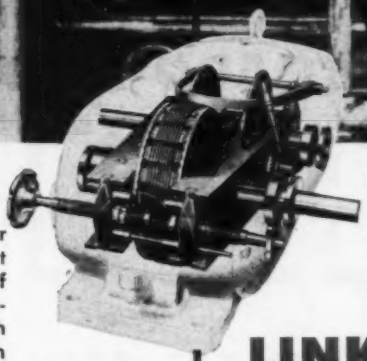




Motorized P.I.V. Variable Speed Drive on this Fourdrinier paper machine permits exact synchronization of dandy rolls with Fourdrinier wire, though rolls may vary as much as 4 inches in diameter.

Better Sheet Formation, Sharper Watermarks.. with LINK-BELT P.I.V. DRIVE

POSITIVE

Power is transmitted from one pair of grooved wheels to another, through a unique chain which forms its own teeth, without slip.

INFINITELY VARIABLE

Speed ratio changes are stepless. Adjustment by easily operated hand wheel permits the most minute variation between input and output speeds, within range of the drive.

By keeping the dandy roll exactly in time with the wire on this Fourdrinier machine, a better sheet formation and sharper watermarks resulted. The problem of dandy rolls varying as much as four inches in diameter, was solved by equipping the machine with a Link-Belt P.I.V. Variable Speed Drive. Dandy rolls of different diameters are brought into synchronism with the wire by simply turning the small hand wheel on the P.I.V. drive and synchronism is maintained by the positive chain drive that provides reliable operation without slip.

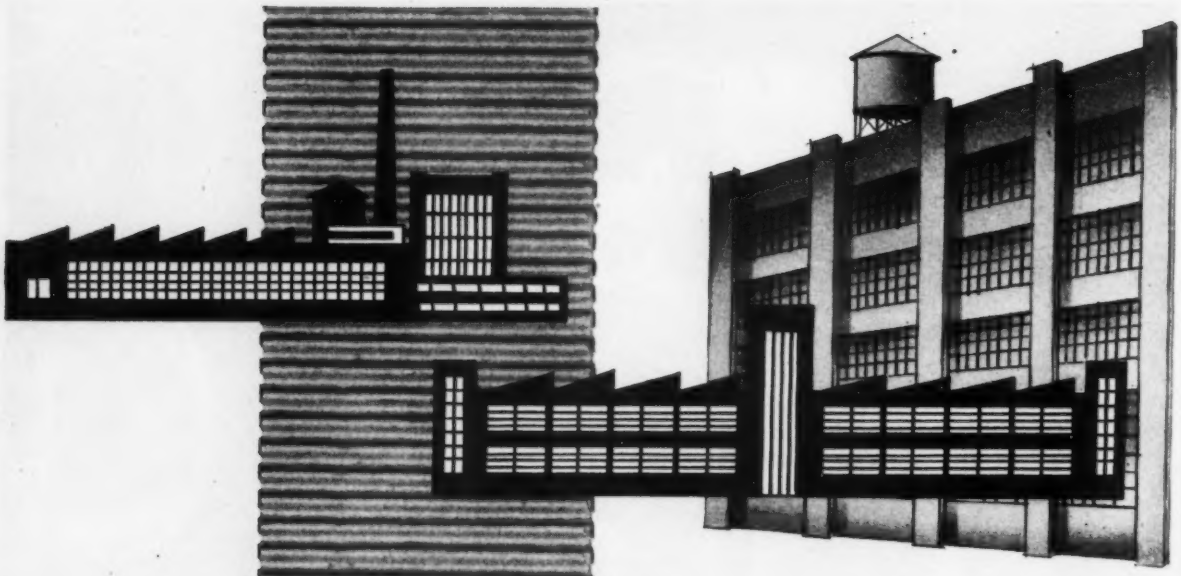
This is one of the numerous cases in paper mills where exact speed of a machine affects some feature of the product. Doubtless there are possible applications in your plant. Write for Book 2274 to learn how P.I.V. Variable Speed Drives can help you.

LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices in Principal Cities. 11,545

Wherever exact synchronization of rotating parts must be maintained in continuous duty operation . . . INDUSTRY USES

LINK-BELT P.I.V. Variable Speed Drive



MORE CORRUGATED BOARD PLANTS USE

STARCH

THAN ANY OTHER FASTENER

STARCH BINDS BETTER, FASTER, MORE ECONOMICALLY

And You'll Get Best Results From Dependable Quick Setting Better Binding

A-B STARCH

CORN PRODUCTS DEPARTMENT

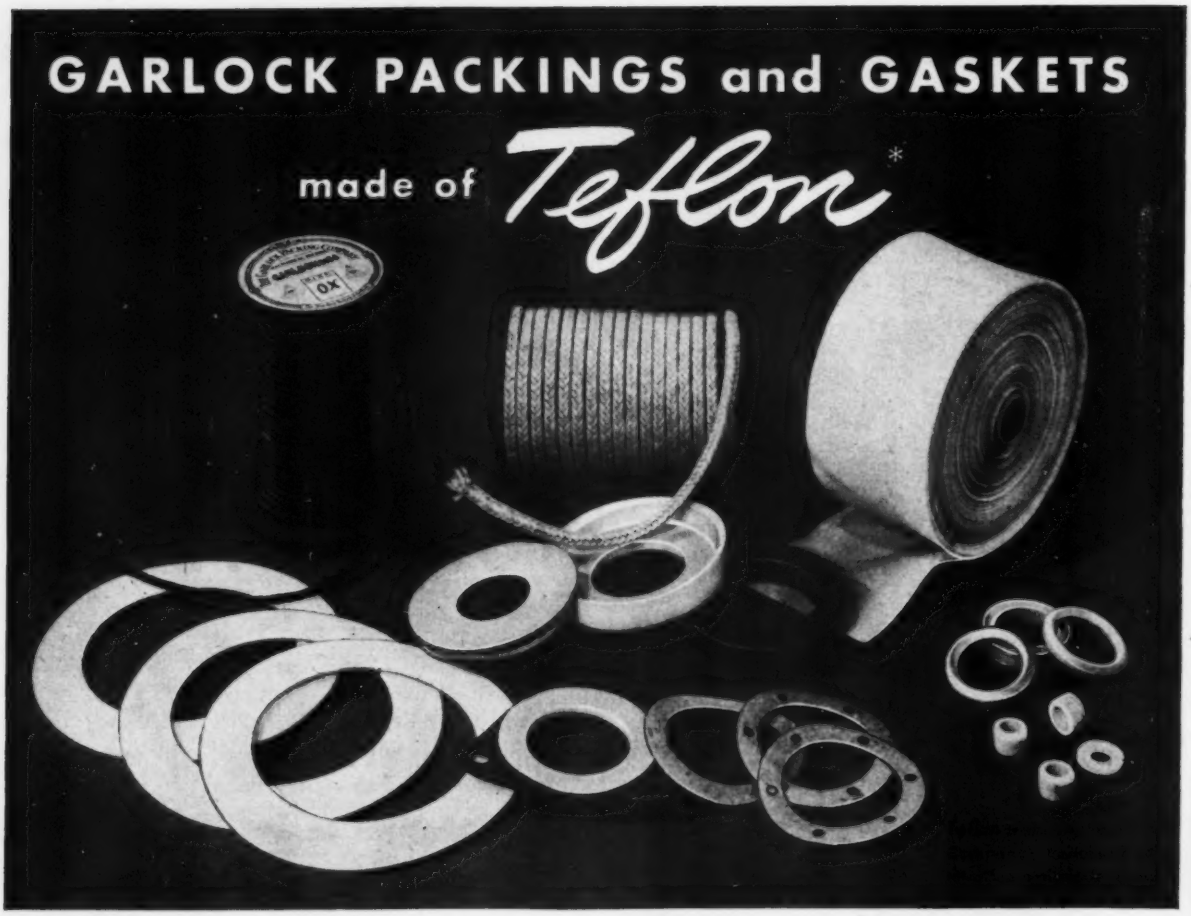
ANHEUSER-BUSCH, INC.

ST. LOUIS

This Cast Steel Pressure Seal Gate Valve is one of many Powell designs specifically engineered for Power Plants
HORIZONS UNLIMITED!
Today, Powell Valves meet every requirement of American Industry for long-life, dependable flow control equipment. And, as new demands arise, Powell will make the right valves to satisfy them.
Powell makes valves specifically adapted to YOUR industry. The Complete Powell Line includes Globe, Angle, Gate, Check, "Y", Non-return, Relief and Flush Bottom Tank Valves, in Bronze, Iron, Steel and the widest range of Corrosion-Resistant metals and alloys ever used in valves.
PATENTED
POWELL
1500
STEEL
POWELL
The WM. POWELL CO., 2525 Spring Grove Ave., P. O. Box 106, Station B, Cincinnati 22, Ohio

GARLOCK PACKINGS and GASKETS

made of *Teflon*®



Extremely Inert to Chemicals; Heat Resistant; Tough; Durable

GARLOCK packings and gaskets made of *Teflon* solve the problem of sealing against acids and chemicals of all kinds.

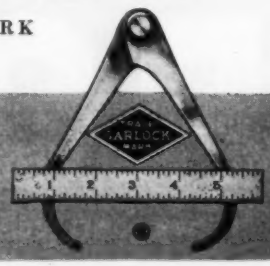
These *Teflon* products, fabricated in the GARLOCK factories, are unaffected by any acid and are highly resistant to all organic solvents and alkalies. They operate at temperatures from below −90° F. up to +500° F. and have high mechanical strength and a low coefficient of friction within that temperature range.

For use on valves, pump rods or shafts and any other equipment in the chemical industry, GARLOCK produces several types of braided and molded *Teflon* packings. For gasketing flanged joints of all kinds, including glass and porcelain flanges, *Teflon* envelope gaskets or solid *Teflon* gaskets are available in required sizes and shapes.

To avoid frequent shut-downs and reduce your packing costs, use GARLOCK packings and gaskets made of *Teflon* on all your equipment handling acids or chemicals. *Write for pamphlet.*

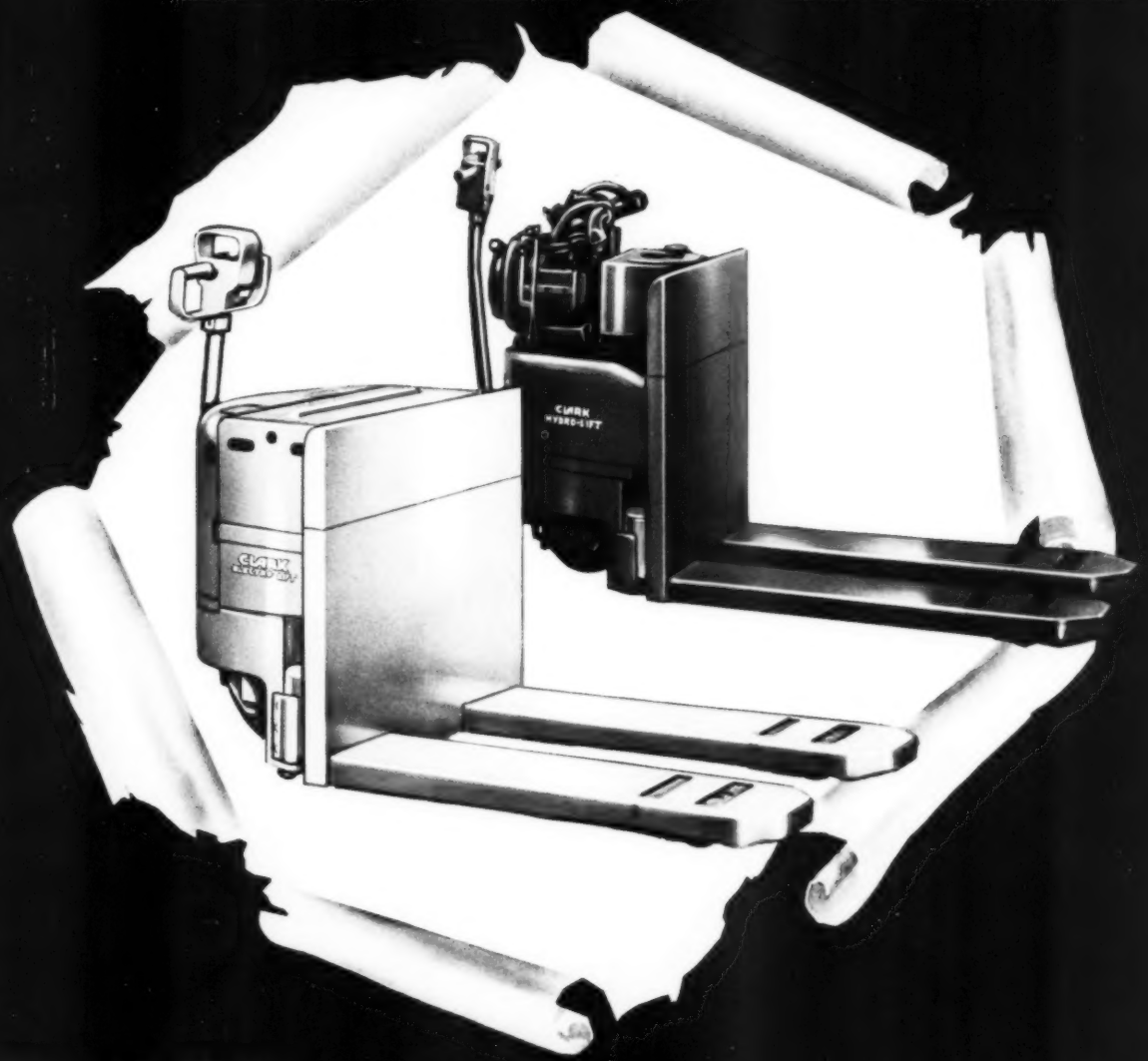
THE GARLOCK PACKING COMPANY, PALMYRA, NEW YORK

In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.



GARLOCK

NO OTHER HAND TRUCK HAS
SO MUCH POWER—SO SHORT A TURNING RADIUS!
PLUS TWO POWER TYPES—GAS OR ELECTRIC



CLARK

POWERED HAND TRUCKS

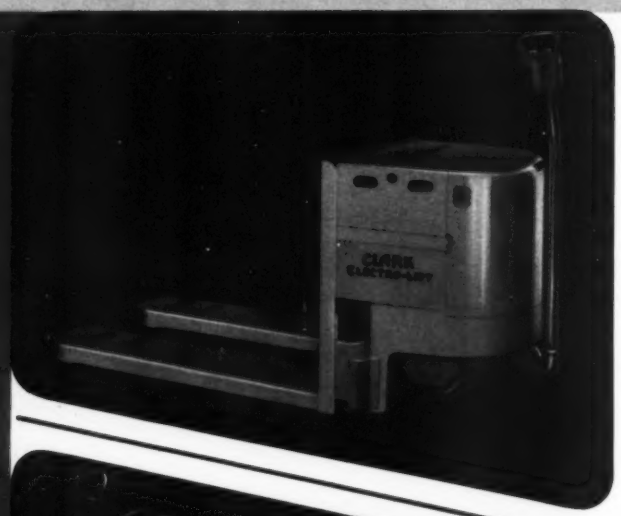
TURN
PAGE
FOR MORE
HAND TRUCK DETAILS

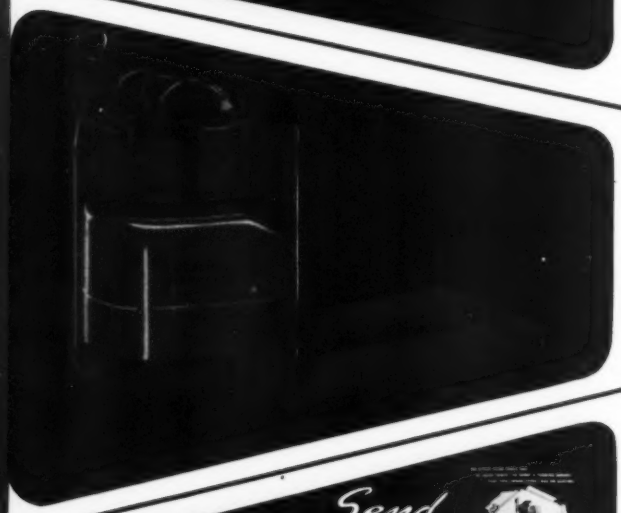
CLARK EQUIPMENT COMPANY, INDUSTRIAL TRUCK DIVISION
BATTLE CREEK, MICHIGAN

The NEW CLARK POWERED HAND TRUCKS

with the motor in the drive wheel

SHORTEST TURNING RADIUS — GREATEST POWER





TWO POWER TYPES

1 ELECTRO-LIFT

BATTERY POWER—ELECTRIC MOTOR DRIVE

New-type compound motor develops *more* power than any other hand truck . . . Economical consumption of power means longer work periods . . . Ample reserve power available when required . . . Automatic acceleration prevents abuse, provides smooth, fast "getaway" . . . Speed variations are slight with or without load—reducing operator fatigue . . . Soft, dynamic braking protects loads . . . Lift motor, pump, relief valve, check valve and sump in single compact unit . . . The *only* short truck with space for batteries up to and including 19-plate.

2 HYDRO-LIFT

GAS-ENGINE POWER—HYDRAULIC MOTOR DRIVE

Entirely new in the field of Materials Handling . . . 24-hour ramp service every day! . . . Hydraulic power infinitely smoother than any other type . . . Heavy-duty vane-type hydraulic units for continuous efficiency and long life . . . Effortless finger-tip reversal of direction . . . Automatic torque multiplication assures ample reserve power when needed . . . Hydraulic pump powers both drive and lift.

Compare CLARK machines with any and all others of their type! You'll find they excel because they give you:

- *Shortest turning radius*
- Shortest wheel base, giving better load distribution
- Greater underclearance to prevent "hanging up"
- Greatest accessibility for maintenance
- Reduced wear on rubber and floor because of larger (14") drive tire. This tire carries greater load, relieving burden on rollers
- Drive motor *mounted in the wheel*
- Compact, fully enclosed drive unit
- Lifting rams self-aligning and instantly accessible
- Rugged frame, and largest main carrier bearing
- Largest mechanical brake

The full story of these Clark Quality trucks, designed to *give industrial users what they want*, is told in a booklet that is yours for the asking. Just fill in the coupon, attach it to your letterhead and mail it.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 67, MICH.

Please send me the new Hand Truck Booklet

Name_____

Firm Name_____

Street_____

City_____ Zone____ State_____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

PRODUCTS OF CLARK—TRANSMISSIONS • FORK TRUCKS & TRACTORS • AXLE HOUSINGS • GEARS AND FORGINGS • RAILWAY CAR TRUCKS • ELECTRIC STEEL CASTINGS • AXLES • TRACTOR UNITS

This 4-pen Bailey Pyrotron makes the same number of *continuous* records as are made by four single pen recorders and it takes only one-fourth as much panel space.

ADVANTAGES OF MULTI-PEN RECORDERS

When you specify Bailey Multi-Pen Pyrotron Recorders and Controllers you simplify the comparison of related records, reduce the number of charts to be handled, and simplify panel layouts.

CONTINUOUS RECORDS

Regardless of whether you select four-pen Pyrotrons or one-pen Pyrotrons the records are truly continuous. Each pen is actuated by a separate system which responds instantly to temperature changes. There is no switching from one point to another. Each pen draws a continuous ink record in a distinctive color.

MULTI-CONTROLLERS

Bailey Pyrotron Recorder-Controllers record and control one or two temperatures. Air operated, electronic, or on-off electric controls may be supplied.

UNUSUAL FEATURES OF THE BAILEY PYROTRON

ELECTRONIC RESISTANCE THERMOMETER

1. **Resists vibration and shock.**
2. **Needs no careful leveling.**
3. **Motor drive provides abundant power for operation of recording pen, controller, alarms and signals.**
4. **Simple a-c measuring bridge needs no battery.**
5. **Sturdy electronic units keep the bridge in continuous balance and replace the usual galvanometer and its attendant mechanism for step by step balancing.**
6. **Interchangeability of packaged units simplifies replacement.**

For details on this unusual Electronic Resistance Thermometer, which indicates, records and controls temperatures between —100°F. and 1200° F. ask for Bulletin 230-A.

P-8

BAILEY METER COMPANY

1058 IVANHOE ROAD • • • CLEVELAND 10, OHIO

Controls for Processing

TEMPERATURE FLOW
PRESSURE LEVEL
% OXYGEN DENSITY
% COMBUSTIBLES RATIO

The LONG and the SHORT
of Downingtown preference throughout the world

This small suction couch roll, shipped to Massachusetts, has a diameter of 14" and a face of 76".
This giant suction couch roll, shipped to Finland, measures 42" in diameter and has a 240 1/2" face.

As the photograph suggests, Downingtown Suction Couch Rolls are made in a wide range of sizes but, large or small, they have the same high quality and dependability. Ever since 1923, when we introduced the Kilberry roll to the industry, we have pioneered in modern suction roll development. Today we have the most complete line of this equipment in the world. Remember, when it's a question of efficient water removal, ask Downingtown.

DOWNINGTOWN MANUFACTURING COMPANY
DOWNINGTOWN, PA.

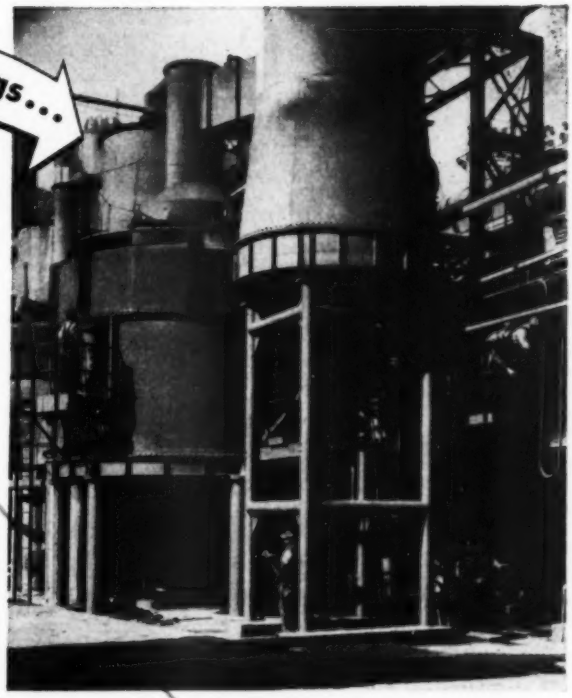
Pacific Coast Representative: JOHN V. ROSLUND, Pacific Bldg., Portland 4, Ore.

DESIGNERS AND BUILDERS OF PAPER AND BOARD MAKING MACHINERY SINCE 1880

In the field of protective coatings...

QUALITY MEANS INSUL-MASTIC

Coatings carefully manufactured to do a job, *not by-products, or hasty formulations to tap a market.* Quality coatings are Insul-Mastic's *only* business and *they have no equal.*



LONG LIFE

Insul-Mastic's maintenance-free life was determined to be approximately 50 years by a well known testing laboratory*. An eight-year continuous test in a Weather-O-Meter (equivalent to 57 years outside weather) has corroborated this finding. Gilsonite plus carefully chosen and tested Mica Flake, make possible this quality. U.S. Bureau of Standards determined such mica by far the most effective filler contributing to long life.

RESISTANCE TO EXTREME TEMPERATURES

Insul-Mastic has a temperature range of −40° F. to +300° F. due to proper balancing of high melting point Gilsonite and low melting point asphalts.

RESISTANT TO MOST ACIDS AND ALKALIS

Insul-Mastic's principal ingredient is Gilsonite, a hydrocarbon so thoroughly saturated that it is practically inert and, therefore, rarely displaced by acids and alkalis.

EASY TO SPRAY

Homogenized and filtered Insul-Mastic flows smoothly through the spray gun and onto the surface without blobs and pinholes or clogging the gun.

NO HARMFUL EFFECTS... ODORLESS AFTER DRYING

Insul-Mastic has no toxic fumes which necessitate wearing a mask, nor will it burn the eyes or skin of workmen. These coatings have no odor after they have dried.

Think first of the coatings that last!

For the prevention of corrosion; for a sprayable, moisture resistant insulation; for vaporsealing soft thermal insulation; for sealing buildings against moisture—*write for the name of your nearest Insul-Mastic licensee.*

*Name on request

Insul-Mastic Corporation
OF AMERICA
1157 OLIVER BUILDING · PITTSBURGH 22, PA.
Representatives in Principal Cities

New Camachines® have stepped up production without increasing costs. Speeds like a mile-a-minute on the big newsprint winders. And 1000 f.p.m. on delicate slitter-rewinder operations where 400 f.p.m. was tops only a few years ago. Along with high speeds are many revolutionary new performance features adding to roll quality, providing greater versatility and more simple operation.

New *Camachine* performance gives you a great opportunity to increase your production, increase your market and increase your profit. No matter what material you work with—paper, plastic, rubber or textile—you'll please your customers by offering faster delivery of top quality rolls. With the *right* new *Camachine* working for you...

The Camachine Commander—a fast, heavy-duty slitter-rewinder for plain, waxed, gummed and coated paper or paper board. Speeds up to 2000 fpm. Rewound rolls up to 40" dia. Write for free copy of Bulletin 2000.

you'll find new customers everywhere

Cameron Machine Company • 61 Poplar Street • Brooklyn 2, N. Y.

Camachine engineers will be pleased to consult with you on any roll production problem.

AA-328

Hooperwood's method of calendering the new S/AA Dryer Felt eliminates all protruding fibres so paper stock will not adhere to the felt and cause it to "fill up." Also the exceptionally smooth, twill-like surface will not mark the sheet.

These advantages are but two of many which S/AA offers. Mill men also like the blend of asbestos and cotton fibre which gives S/AA felts heat resistance *plus* absorbency. Good drainage is afforded by all asbestos surface warps weaving directly through the felt.

Important, too—high tensile yarns give longer life, lower dryer felt cost per ton.

Today, write for a sample of S/AA.

WM. E. HOOPER & SONS CO.
General Sales Offices:
New York 320 Broadway — PHILADELPHIA Juniper & Cherry Sts. — Chicago 300 W. Adams St.
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HOOPERWOOD DRYER FELTS

Titanox...

makes glassine packaging shout "PICK-ME-UP"!

● You build real consumer appeal into glassine packaging for candy, bakery goods and other food products when you use TITANOX pigments.

Just a little TITANOX affords any degree of opacity without impairing tensile strength. For instance, only a small amount of TITANOX-A-WD added to the beater yields outstanding translucency. By increasing the amount of this pigment you get brilliant opacity that boosts the legibility of printing . . . makes the wrapper highly visible.

Amounts required vary from less than 1% up to 5% of the sheet. Our Technical Service Department is ready at all times to help you in working out the ideal opacification of your glassine stocks. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; 104 South Michigan Avenue, Chicago 3, Ill.; 2600 South Eastern Avenue, Los Angeles 22, Calif. Branches in all other principal cities.

® TITANOX

the brightest name in pigments

TITANIUM PIGMENT CORPORATION

Subsidiary of **NATIONAL LEAD COMPANY**

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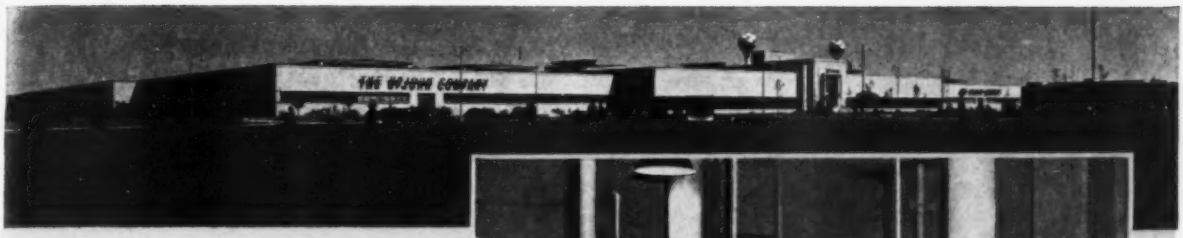
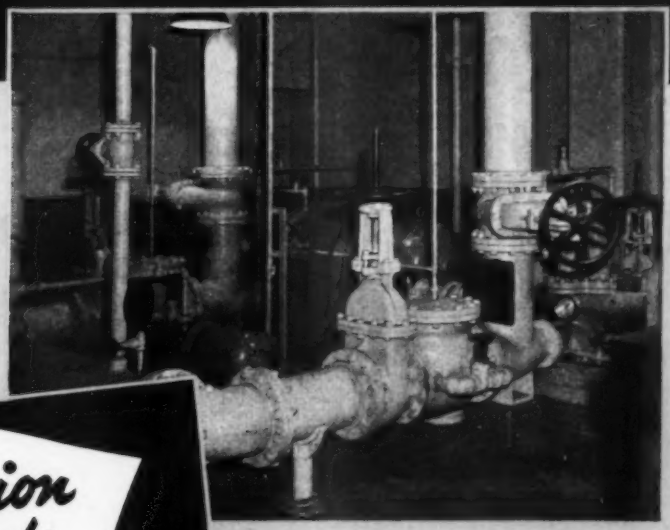


...IN THE NEW
UPJOHN
PHARMACEUTICAL
PLANT...



An installation of 12-inch OIC gate valves in the ultra-modern UPJOHN plant at Kalamazoo, Michigan.

1,500 acres of buildings and facilities devoted to one purpose—to produce pharmaceuticals with high standards of quality and potency. The Ohio Injector Company is proud to have had OIC Valves included as part of UPJOHN's program.

OIC Valves are *precision engineered* and *precision built* for most efficient control of flow of air, gases and liquids. OIC engineers will help planners and builders select valves best suited for each job—*precision application* help.

For a free copy of the 1950 OIC Valve Cross-Reference Chart, see your local OIC distributor, or write us direct. The Ohio Injector Company, Wadsworth, Ohio.

OIC
FOUNDED 1883

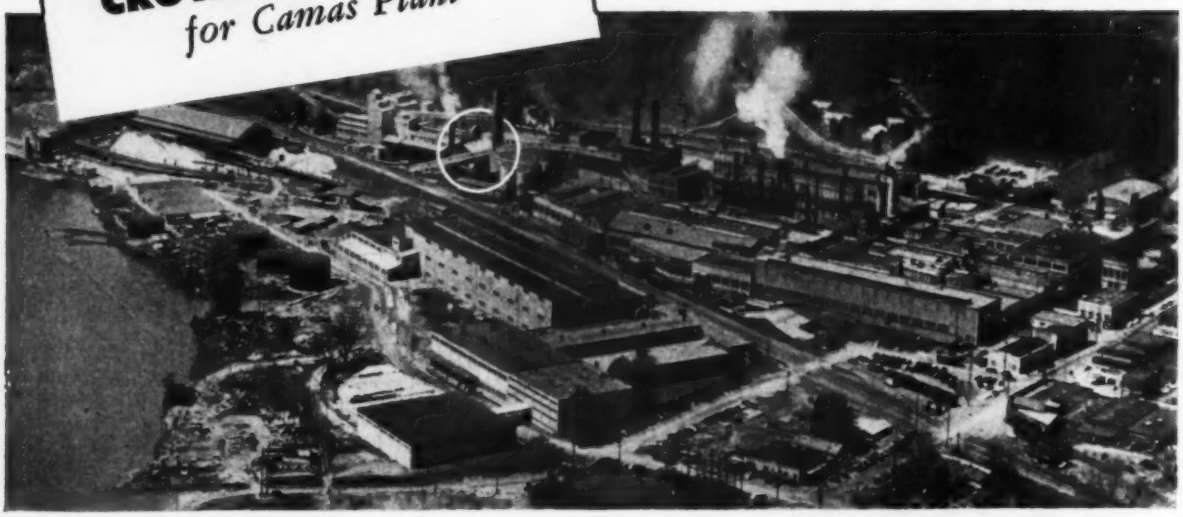
VALVES
FORGED AND CAST STEEL · IRON · BRONZE

Western Precipitation COTTRELL

again selected by

CROWN-ZELLERBACH

for Camas Plant



New Camas recovery unit one of many successful Western Precipitation paper installations...

WESTERN PRECIPITATION is the organization that—more than 30 years ago—pioneered the first successful application of COTTRELL equipment for collecting soda ash from the recovery furnaces in paper plant operations. And through the years Western Precipitation has continued its leadership in COTTRELL installations with one important development after another.

One of the latest Western Precipitation paper installations is the COTTRELL unit recently completed for Crown-Zellerbach for their kraft plant at Camas. This COTTRELL, recovering soda salts from the black liquor furnace gases, is only one of the Western Precipitation COTTRELL units chosen by Crown-Zellerbach for their paper mills.

In fact, at the Camas plant itself another Western Precipitation COTTRELL unit has been in successful operation for some 8 years, and the success of this installation was an important factor in the decision of Crown-Zellerbach to again install a Western Precipitation COTTRELL in the newly completed expansion to their Camas kraft mill operations.

Throughout the paper industry many other companies have also selected Western Precipitation COTTRELL equipment for their kraft mill recovery units, and the invaluable experience gained through the years by the Western Precipitation organization in this specialized field can be helpful to any paper plant contemplating installation of recovery equipment. Let our engineers study your particular requirements and make recommendations based on over 30 years of first-hand experience in the paper industry—more than 40 years in the design and construction of COTTRELL equipment for all types of industrial applications.

Send for descriptive literature on COTTRELL *equipment*

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1037 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

CHEMICAL USERS' GUIDE To General Chemical Products for the Paper Industry

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTH (MIN.)	SHIPPING CONTAINERS	APPLICATIONS
Aluminum Sulfate $Al_2(SO_4)_3 \cdot 14H_2O$ approx. *(Alum)*	Commercial & Iron Free: Lump, Ground Powdered	17.25% Al_2O_3	Bags Bulk Carloads	Precipitation of rosin size and filler; water clarification; manufacture of satin white; pitch control; mordant for dyes.
Aluminum Sulfate $Al_2(SO_4)_3$ + water *(Liquid Alum)*	Liquid	32° Be (total Al_2O_3 7.2%)	Tank Trucks Tank Cars	Same as commercial dry product but lower strength.
Salt Cake Na_2SO_4 *(Sodium Sulfate)*	White or Grayish Granules	95-99% Na_2SO_4	Bags Bulk Carloads	Used in kraft cooking liquors as the source of Na_2S.
Glauber's Salt, Crystal $Na_2SO_4 \cdot 10H_2O$ *(Sodium Sulfate)*	Colorless Crystals	96% $Na_2SO_4 \cdot 10H_2O$ (42.3% Na_2SO_4)	Bags Barrels Fibre Drums	Substitute for salt cake in kraft cooking liquor.
Glauber's Salt, Anhydrous Na_2SO_4 *(Sodium Sulfate)*	White Granules	99.5% Na_2SO_4	Bags Bulk Carloads	Same as Crystal but stronger product.
Sulfuric Acid H_2SO_4	Liquid	66° (93.19%), 99% 20% oleum and higher strengths	Carboys Steel Drums Tank Trucks Tank Cars	Wire souring; parchmentizing; acid wash in last stage of multi-stage pulp bleaching; neutralizing tall oil soaps.
Sodium Thiosulfate $Na_2S_2O_3 \cdot 5H_2O$ *(Hypo)*	Colorless Crystals	99.75% $Na_2S_2O_3 \cdot 5H_2O$	Bags Fibre Drums	Anti-chlor.
Sodium Sulfite, Anhydrous Na_2SO_3 *("Sulfite")*	White Powder	98.5% Na_2SO_3	Bags Fibre Drums	Anti-chlor.
Sodium Silicate $Na_2O \cdot XSiO_2$ + water *(Water Glass)*	Liquid	38°, 41°, 42° Be; special and higher strengths	Steel Drums Tank Cars Tank Trucks	Adhesive for corrugated and solid fibre board; used in coating mixtures to reduce viscosity and in beater sizing to stiffen paper. Aid in bleaching & flocculation.
Chromium Potassium Sulfate $K_2SO_4 \cdot Cr_2(SO_4)_3 \cdot 24H_2O$ *(Potash Chrome Alum)*	Red Violet Crystals	99.5% $K_2SO_4 \cdot Cr_2(SO_4)_3 \cdot 24H_2O$	Fibre Drums	Used in "save-all" or white water systems.
Aqua Ammonia NH_4OH + water *(Ammonia)*	Colorless Liquid	26° Be (29.4% NH_3)	Carboys Steel Drums Tank Trucks	Used with chlorine to form chloramines for slime control.
Sodium Fluoride	Powder	90% NaF 95% NaF	Fibre Drums	Preservative and stabilizer for starch in coating mixtures.
Tetrasodium Pyrophosphate, Anhydrous $Na_4P_2O_7$ *(TSPP) (Pyro)*	White Powder	98% $Na_4P_2O_7$ (Equiv. 52% P_2O_5)	Bags Fibre Drums	Felt washing; pitch dispersion.
Nitric Acid HNO_3 + water	Liquid	42° Be 67.2% HNO_3	Carboys Drums Tank Trucks	Nitrating pulp; cleaning monel metal.
Sodium Sulfide Na_2S + water	Red Chips or Solid Mass	60% Na_2S	Steel Drums	Substitute for salt cake in modified soda process.

BASIC CHEMICALS

FOR AMERICAN INDUSTRY

The products advertised are commercial chemicals having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.

OTHER PRODUCTS: Hydrochloric Acid; Sodium Metasilicate; Trisodium Phosphate; Copper Sulphate; Disodium Phosphate.

FOR THE LABORATORY OR SPECIAL APPLICATIONS: BAKER & ADAMSON REAGENTS and FINE CHEMICALS

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

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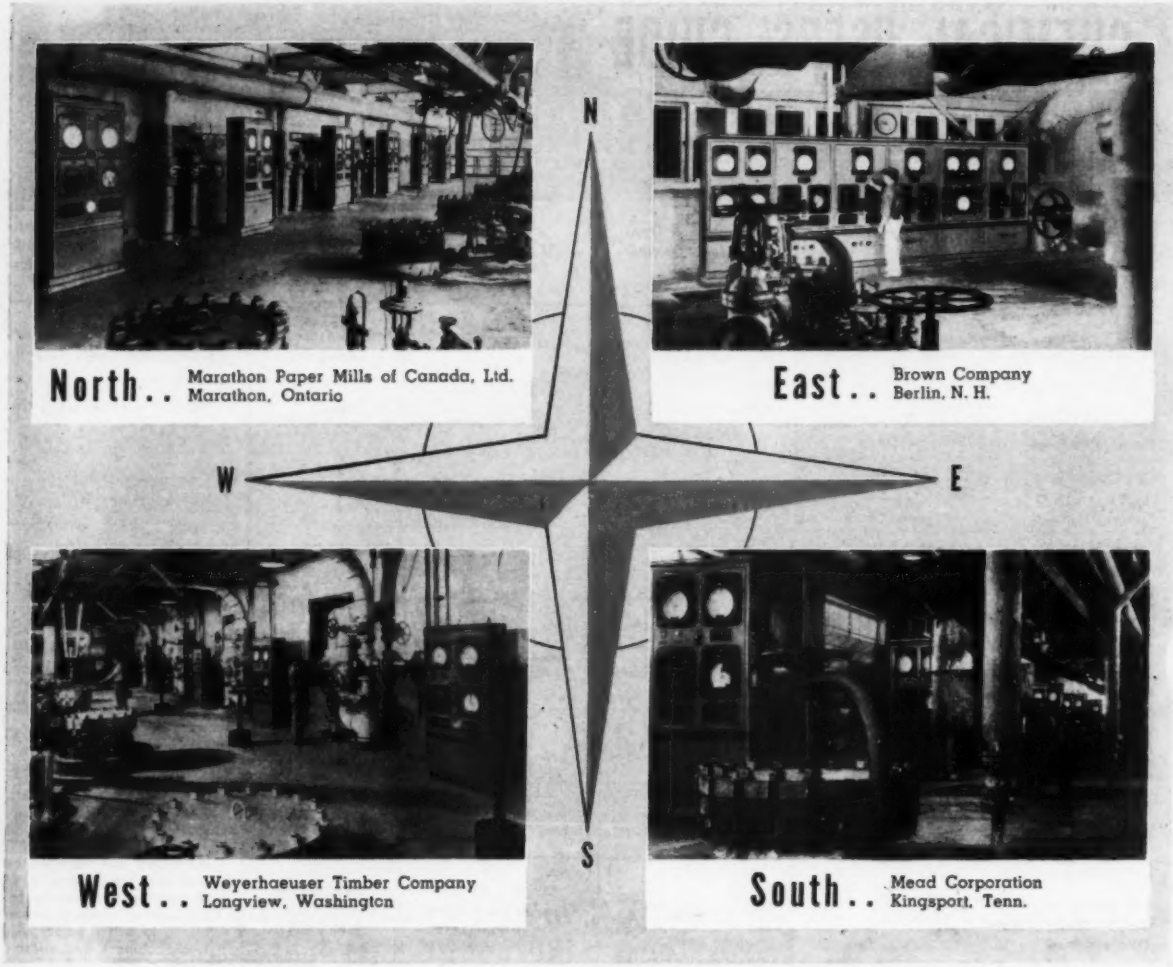
In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver



Better pulp production comes automatically with FOXBORO Digester Control

Wherever pulp is made, modern digester rooms like the ones shown above are proof that Foxboro Control is the shortest route to better operation.

With this advanced-design control, you can be sure that every cook will follow the exact schedule you want. Steaming and gas-off will be held to the requirements of the individual cook. Pulp quality and uniformity will be improved, with substantial savings in steam and chemicals.

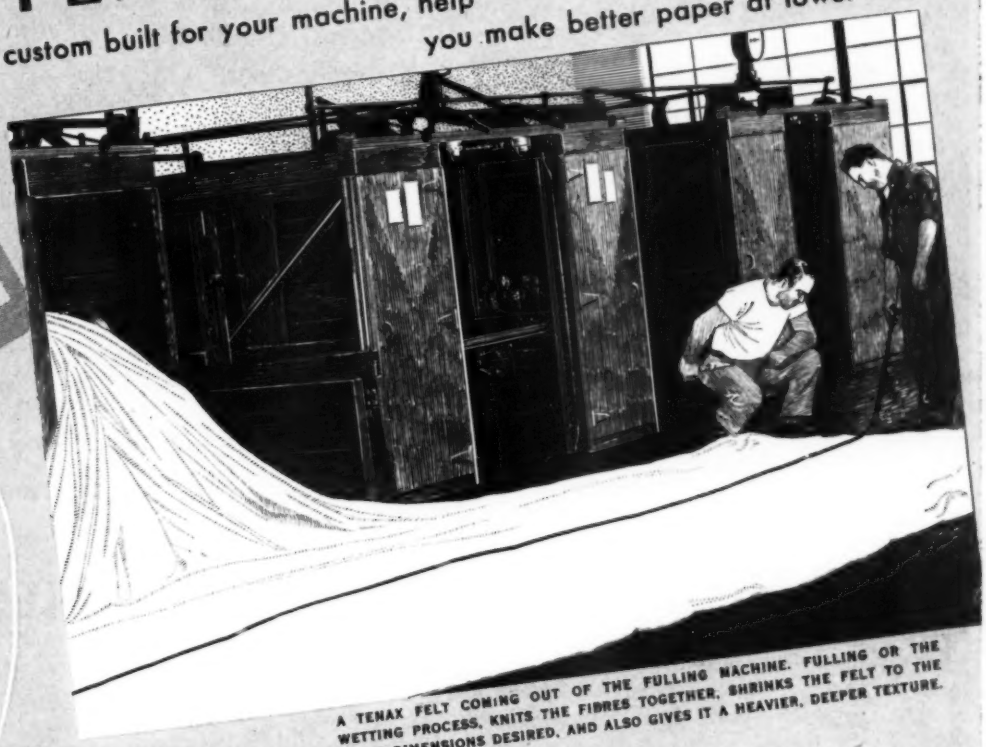
Foxboro Control Instrumentation is available for *all* types of digesters. For detailed information, discuss your problems with the Foxboro engineer in your area, or write to **The Foxboro Company, 158 Neponset Ave., Foxboro, Mass., U.S.A.**

FOXBORO
Reg. U. S. Pat. Off.

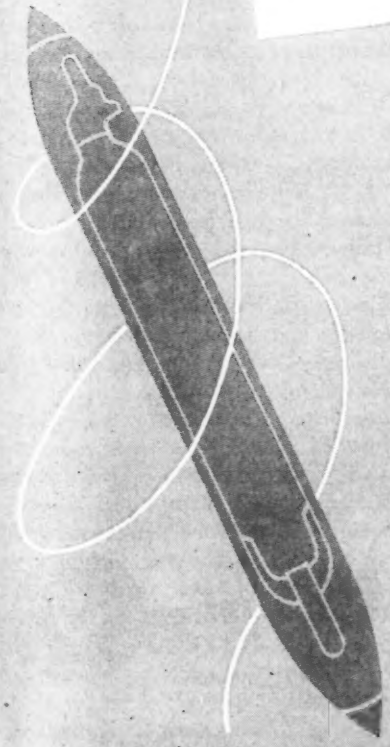
AUTOMATIC DIGESTER CONTROL

TENAX FELTS

custom built for your machine, help you make better paper at lower cost



A TENAX FELT COMING OUT OF THE FULLING MACHINE. FULLING OR THE WETTING PROCESS, KNITS THE FIBRES TOGETHER, SHRINKS THE FELT TO THE EXACT DIMENSIONS DESIRED, AND ALSO GIVES IT A HEAVIER, DEEPER TEXTURE.



Made by experienced and skillful craftsmen from the finest selected wools, Tenax Felts are individually designed for your paper machines. Each Felt is conceived and produced to keep a particular machine of yours operating at its most profitable efficiency.

The Lockport representative in your territory is fully qualified to advise on all technical questions relating to felts. He is at your service as is our plant and all its people. We invite your inquiries.

LOCKPORT FELT COMPANY—NEWFANE, NEW YORK

THE VANDERBILT LABORATORIES

Norwalk, Conn.

★

For Testing and Developing
Methods of Improving
Paper Products

★

R. T. VANDERBILT CO., INC.

230 Park Avenue, New York City

The Paper Industry

November 1950

Co-operation—the Key to Safety

INDUSTRY'S ATTENTION was again focused on safety when the National Safety Congress was held in Chicago last month. As usual, major emphasis was placed on reducing hazards and on influencing workers to be more vigilant and more cognizant of the hazards of their own jobs. It is well recognized that the setting up of a formal safety program is simple. Actual procedures are readily available and various agencies such as the National Safety Council and insurance companies gladly assist in the promotion of safety work.

The success of any safety effort, however, depends on the attitudes of three distinct groups of mill employees: management, supervisors, and workers. It's not enough for management to assent to the idea of a safety program. Management's attitude toward safety must be just as positive as its attitude toward the accomplishment of other functions such as production, waste elimination, research, costs, etc. Since safety is actually an individual responsibility, it is necessary for management to support wholeheartedly any safety program because the individual worker quickly senses indifference or superficiality of management's everyday attitude toward accident prevention.

While the mill safety director has charge of the safety program and is responsible for safety activities, it is the department heads and supervisors who have day-by-day and hour-by-hour responsibility for reducing accident hazards. It is the supervisor who brings management's attitude to the worker and the worker's attitude to top management. If top management is hazy or careless in its support of a positive program of safety, this attitude is reflected directly by the supervisor in his contact with his department. Characteristics and personal traits of individuals have an important part in whether or not the worker is prone to have accidents, and it is the supervisor's job to recognize these traits and to aid in overcoming them. For all practical purposes the supervisor is the most important cog in the wheel of industrial safety.

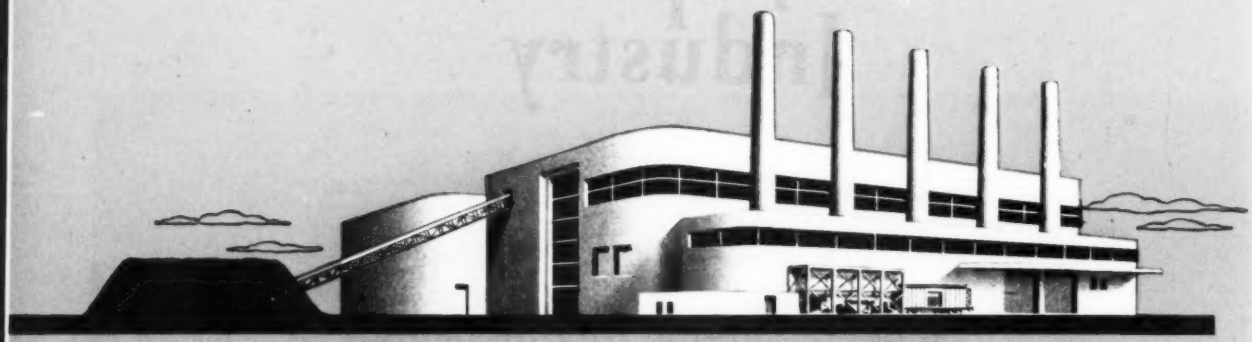
Individual workers have the greatest stake of all in safety. From the standpoint of management, the cost of accidents to personnel is often greater than accidents that damage property and equipment. However, there is little question but that the individual has the greatest stake in making the safety program work. It is he who must suffer the pain of injury. It is his family that is deprived of the livelihood he provides for them. It is, therefore, paramount that the individual worker's attitude toward safety be such that he is continually striving to accomplish his daily tasks in the most safe and productive manner possible.

Except for the workers' basic habits and characteristics, the most important factors affecting his attitude are the attitudes of his top management and his immediate supervisors. If safety is considered in a negative sense by his supervisors, the man's work will reflect a negative attitude toward safety. If poor housekeeping is permitted in the mill, a poor safety record is apt to be a foregone conclusion. If supervisors observe safety rules, it's natural for them to insist that the workers observe them as well.

While safety is an individual responsibility, it is through group activity and an organized safety program that the efforts of every plant employee are enlisted to eliminate accidents and to wipe out the causes of accidents. It is here that the safety director with the full support of top management sets up the organized functions of an effective safety program. Acting as a catalyst, the safety director's most important function is to promote the active participation of all groups in the safety program and to make each worker feel that he is his brother's keeper.

Important as is the active participation of each group, it is clear that the most essential ingredient of any successful safety achievement is complete co-operation. An outstanding example of co-operative effort is the working organization of the National Container Corp., whose safety achievement in winning THE PAPER INDUSTRY'S Fritz Memorial trophy is recounted in succeeding pages of this magazine. From top management to bull gang, every individual in that organization tries to do more than his part in avoiding accidents, not only to himself, but to his fellow worker.

Unequalled Piping Experience



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The Paper Industry Current Comment

"E" Day Past! . . . Watch Washington

What about prices and wages now that election is over?
Will the NPA be able to avoid directives or allocations?
If U.S. newsprint manufacturers raise price, what will happen?

EVERYTHING IS SET at Washington to lower the boom on prices and wages, but Administration sources stertorously deny that action has been deferred until after election for fear of the effect of wage and price ceilings on democratic prospects.

Dr. Alan Valentine, former president of the University of Rochester, has been named by the President as Administrator of Economic Stabilization, and Cyrus S. Ching, director of the Federal Mediation and Conciliation Service, has been made chairman of the Wage Stabilization Board. A Director of Price Stabilization will be named, but the wage segment of the Economic Stabilization setup will involve the naming of a tripartite board with industry, labor and public representatives. Management members will be chosen from nominations by the Chamber of Commerce, the National Association of Manufacturers and the Committee for Economic Development. Dr. Valentine is building up the administrative branches of his organization by borrowing men from other government agencies.

Plans formulated at Industry Council meeting

The conference between the Pulp, Paper and Board Industry Council to the Department of Commerce, held October 4 with General Harrison, chairman of the NPA, was fruitful in that steps were taken to assist the Government in securing required materials for defense, but with the elimination of some of the cumbersome procedures of the old War Production Board. An over-all Forest Products Industry Advisory Board was set up with George Olmsted, Jr., W. B. Zimmerman, L. K. Larson, and H. R. Weaver (with G. E. Dyke as alternate) as the paper industry representatives. Four other members will be chosen from the lumber industry and four from the plywood industry to complete the board. Also, tentative plans were formulated for the handling of special problems by task groups from affected branches of the paper industry. The first effective step in this direction was the formulating of a program by which the printing and fine paper manufacturers will co-operate to supply the Government with its immediate needs for Government printing, thus avoiding the need for formal directives or allocation procedure.

A formal request was filed with the Council and the NPA for the deletion of pulp from the list of commodities subject to priority Defense Order procedure. It was stated that the pulp situation is sufficiently fluid to make formal "DO" orders unnecessary. It was pointed out that 70 per cent of the United States pulp consumption is imported, and that of the balance 24 per cent is used by the producers themselves, leaving only 6 per cent of the consumption available for arbitrary defense orders.

In still another field of national mobilization, steps have been taken for wartime control of the domestic economy. A Defense Transportation Administration has been established with James Knudson, on loan from the Interstate Commerce Commission, in charge. This agency will supervise priorities and allocations of domestic transportation, shipping and related activities.

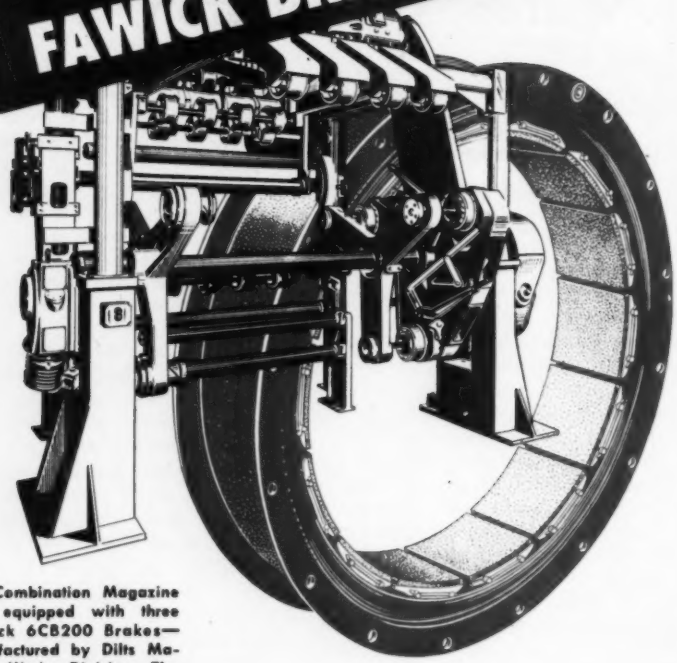
Will U.S. newsprint manufacturers raise prices?

While Washington decisions have been of the utmost importance to the paper industry, there have been striking developments in the industrial picture, not the least being the increase in pulp prices. In many respects the increase announced on groundwood pulp by several Canadian producers will attract the most public attention, because of its effect on newsprint prices. Some Canadian mills have already announced price increases, approximating $10 per ton. The newspaper publishers are protesting violently, and Chairman Celler, of the House committee that has been investigating newsprint prices, was quick to call this a price squeeze. He said that if American companies follow suit he will call upon the President to exercise his power under the Defense Production Act to order cutbacks. While such action might counteract a price rise on domestic production, it is doubtful if it could apply to imports from Canada. And then the question arises whether producers will remain quite so ready to strain their productive facilities to meet the large domestic demands. If a ceiling is placed on newsprint, there is an attractive market at higher prices for groundwood printing papers. The suggested action might readily develop into a squeeze on the publishers, under which they face the dilemma of accepting a higher price basis or going without part of their requirements.

THE DOMESTIC PAPER MARKET remains tight. In the face of unprecedented demand prices have not been raised abnormally on any basic paper grades. Allocation by the mills to regular customers is in effect on a broad scale, and orders are accepted for future delivery under firm provision for acceptance at the prices ruling at time of shipment. New production records are being set month after month and the rate of output for the first eight months of the year was at the rate of 23,500,000 tons per year. This means consumption at an increase of more than 50 per cent as compared with the late thirties and it is all going into consumption.

PULP IMPORTERS are battling with the railroads over the amount of free time allowed for movement of their shipments from Atlantic Coast ports. A threat to reduce the fifteen day free time now allowed at Philadelphia, Baltimore and Hampton Roads, importers say, will result in diversion of shipments from those ports to Port Newark, Albany and Portland, Me., where the fifteen-day free time rule prevails. There would also be a trend towards shipments through the St. Lawrence water way to Great Lakes ports, which would entirely cancel tonnage now forwarded by rail.

FINGER-TIP SENSITIVITY TO OPERATING CONTROL IS AUTOMATIC WITH FAWICK BRAKES



72" Combination Magazine Reel equipped with three Fawick 6CB200 Brakes—manufactured by Dilts Machine Works Division, The Black Clawson Co., licensed builder of Kohler Equipment.

When sensitive control is necessary to efficient processing or handling of rolled paper, Fawick Brakes are your natural choice.

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Fawick brakes will increase your machine efficiency by reducing the production downtime required for brake maintenance or jamming of equipment.

For specific information on all advantages of Fawick Clutch and Brake units, write to the Main Office, Cleveland, Ohio, for Bulletin 300.

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Financial

Whether inflationary or not, paper mill securities followed the upward trend of the month in the stock market to unprecedented high levels. Practically no listed paper mill stocks failed to show an advance over previous month's quotations.

Brown Co.—Net profit for forty weeks ended September 2 was $2,923,316 as compared with $768,154 for the comparable period a year ago.

Chesapeake Corp.—Net income for forty weeks ended October 8 was $2,998,326 as against $1,280,955 for the comparable period a year ago.

Container Corp.—Net income for nine months ended September 30 was $7,758,000 as compared with $5,970,000 for the same period in 1949.

Masonite Corp.—Net income for the year ended August 31 was $6,960,000 as against $2,688,886 for the previous fiscal year.

Mead Corp.—Net income for forty weeks ended October 1 was $4,325,310 as compared with $1,986,658 a year ago.

Minnesota and Ontario Paper Co.—Net earnings for nine months ended September 30 was $3,607,717 as compared to $2,449,366 for the comparable period in 1949.

Nekoosa-Edwards Paper Co.—Net income for the first quarter of 1950 was $1,327,761 as compared to $693,802 for the comparable period in 1949.

Rayonier Inc.—Net income for the first nine months of 1950 was $7,518,478 as compared to $4,108,819 for the comparable period in 1949.

St. Regis Paper Co.—Net income for nine months ended September 30 was $7,003,924 as compared with $3,284,394 for the comparable period in 1949. The quarterly dividend has been increased to 25c per share as against the former 15c.

Soundview Pulp Co. — For the nine months ended September 30, net profits were $3,540,238 as compared to $3,919,951 for the same period in 1949.

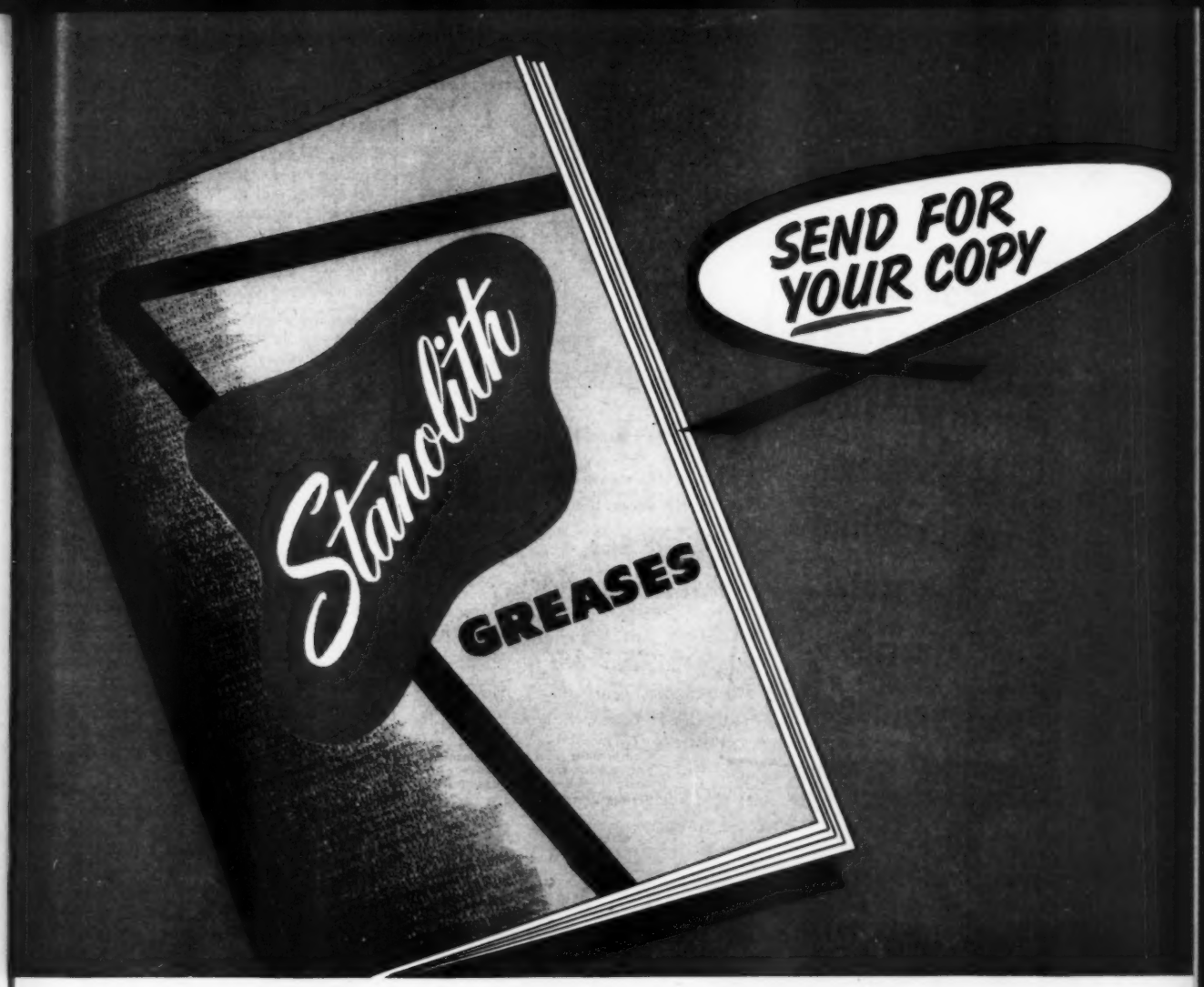
United Board and Carton Corp.—Net income for twelve weeks ended August 19 was $63,277 as compared with $21,977 for the comparable period in 1949.

Paper Mill Corporate Changes

Mobile Paper Mill Co.—The United States District Court at Mobile has authorized the sale of the Mobile Paper Mill Company to the Stone Container Corporation of Chicago for $1,362,000. A partnership, the Stone-Mann Paper Company will take over the operation of the plant and will sell the paperboard produced to the Stone Container plants in various mid-west cities, and to the Seaboard Container Corporation in Pennsylvania and New Jersey.

American Writing Paper Co.—The company has sold to the National Blank Book company its abandoned Riverside Division plant at Holyoke, but the two paper machines may be used in other American Writing Paper divisions.

Container Corp.—Stockholders will vote late in November on a proposal to split the common stock on a two-for-one basis. The new shares will have a par value of $10 instead of the former $20, but the book value of the common stock has about dou-



Here's help for bearings in "HOT WATER"

New booklet tells how STANOLITH Greases solve wet-hot problems

HOW TO LUBRICATE bearings which operate under extremely wet conditions, and at the same time, are subjected to high temperatures? If that is one of your problems, the booklet illustrated above holds the solution.

It tells you about the outstanding qualities of Standard Oil's new STANOLITH Greases. It explains why these lithium soap products—unlike soda soap or lime soap greases—will withstand *both* heat and water. The booklet contains evidence of this ability. It gives actual case histories of some of the many different jobs on which STANOLITH Greases have eliminated troubles caused by high temperatures, presence of steam or water, and high speeds. It also describes successful low-temperature service.

Study this wide range of applications. Discover how the two grades of STANOLITH Grease not only can solve difficult lubrication problems but can save you the cost and trouble of stocking and using a variety of special greases. Send for this information. Write for your copy of the STANOLITH booklet today. Simply address your letter to:

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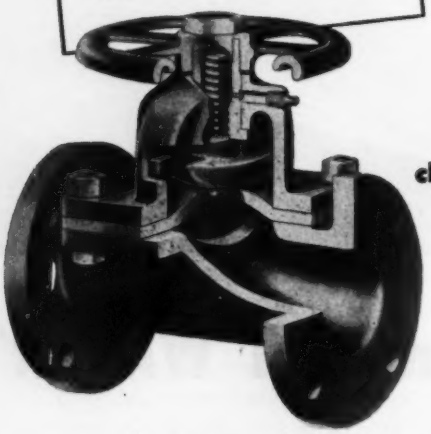
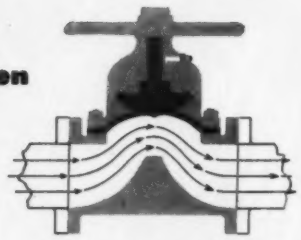
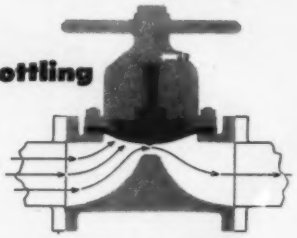




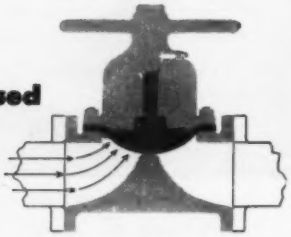
open

Compressor is raised, lifting diaphragm by means of a stud molded into the material.



throttling

Compressor and diaphgram partially lowered. Compressor design guides and supports diaphragm.



closed

Compressor presses diaphragm tightly against weir pinching off flow and making a tight seal.

• When it comes to valving hard-to-handle fluids, the simple pinch clamp principle of Hills-McCanna valves (see above) eliminates most ordinary valve troubles. There is no leakage, no packing and material handled cannot contaminate or be contaminated by the working parts. Hills-McCanna Saunders patent diaphragm valves are the answer to many of the most serious valve problems. Write for full details and ask for a copy of Catalog V-48. HILLS-McCANNA CO. 2433 W. Nelson Street, Chicago 18, Illinois.

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bled in the last ten years. A quarterly dividend of $1 per share, plus an extra of $1 was voted to stockholders of record Nov. 6.

Collins Mfg. Co.—A new firm, the Wilbraham Paper company will again put the old Collins mill at Wilbraham into operation with the manufacture of sulphite and sulphate papers and box boards. The New England Forest Products Corporation which took over the old Collins plant a year ago did not put it into operation.

Franklin Paper Co.—Manufacturing operations will be resumed after four months in which it was expected that future operation would be abandoned. New financial interests are reported to be responsible for the resumption, though the old management will remain in charge.

Mead Corp.—A stock dividend of one-fourth share of common stock has been voted to common stock holders, in addition to a 60 cent extra dividend, together with the regular 40 cent dividend, all payable Dec. 1 to stock of record Nov. 14. The cash dividend will be paid on present shares only.

Crown-Zellerbach Corp.—The outstanding 18,109 shares of $4 cumulative convertible second preferred stock have been called for redemption on Nov. 1, at 102½ plus accumulated dividends.

Brown Co.—Through arrangements with the First Boston Corporation, $3,953,000 first mortgage and collateral trust bonds and $12,620,100 general mortgage 5 per cent cumulative bonds, series A, will be refunded through the sale of $16,000,000 of collateral trust bonds, of which the bulk will be a 3½ per cent series due in 1970, but $2,400,000 at 2½ per cent, due serially from 1951 to 1953.

New York Stock Exchange—Stocks

Closing Prices

	October 21	September 20
A.P.W. Products	4⅝	4⅝
Celotex	15⅛	15⅞
Same Preferred	17	16⅞
Certain-teed Products	14¾	15⅛
Champion P. & F. Co.	45	42¼
Same Preferred	105	104¼
Chesapeake Corp.	41	38
Continental Diamond	11	9⅝
Container Corp.	62¼	57⅞
Same Preferred	104½	*103 –104
Crown Zellerbach	42⅞	40⅛
Same Preferred	103	104½
Same $4 Preferred	127⅝	*118 –120
Dixie Vortex	46¾	43¼
Same "A"	54½	* 52½– 54
Eastern Corp.	18⅛	15⅝
Robert Gair	11	9¼
Same Preferred	13⅜	18⅝
Gaylord Container	27	20⅝
International Paper	46½	37⅞
Same Preferred	108	*107 –108⅛
Kimberly-Clark	43¼	41⅛
Same Preferred	.....	168
McAndrews & Forbes	39½	* 38½– 39⅛
Marathon	35	33⅝
Masonite	57½	56½
Mead Corp.	30¼	26⅛
Same Preferred	92	92
Same 2nd Preferred	60	53
National Container	10⅜	9⅜
Paraffine Cos.	16⅜	15½
Same Preferred	98	* 98½– 99
Rayonier, Inc.	44	41
Same Preferred	34½	34½
Scott Paper	42½	43
Same $3.40 Preferred	99	*101⅛–102
Same $4.00 Preferred	106	*109 –111
St. Regis	11	10
Same Preferred	95½	* 95 – 96½
Sutherland Paper	43¼	44
Same Preferred	114½	*112 –113
Union Bag & Paper Co.	36⅛	35
United Board & Carton	13½	13⅝
United Wall Paper	5	5⅛
Same Preferred	23½	23¾– 24½
U.S. Gypsum	111	111
Same Preferred	.....	*182¾–185
West Va. P. & P. Co.	68	64¼
Same Preferred	110½	*108½–109½
A.P.W. Products 3%	83½	83
Celotex 3¼%	102½	102¼
Champion P. & F. Co. 3%	104	103
Mead Corp. 3%	106	107

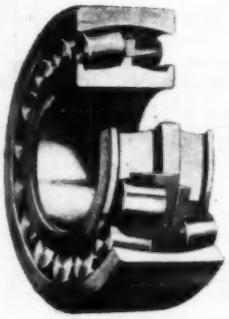
New York Curb Exchange—Stocks

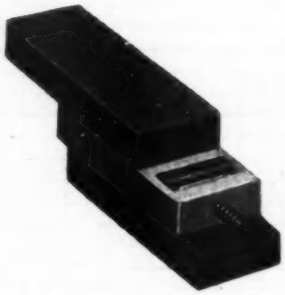
	October 21	September 20
Am. Writing	8	8
Great Northern	46	43¾

* Closing Bid and Asked Prices.

smooth-running paper machine

BY PUSEY AND JONES—OPERATES ON TORRINGTON SPHERICAL ROLLER BEARINGS





Pusey & Jones Corporation used Torrington Spherical Roller Bearings in the press and dryer sections of the 160" kraft paper machine for the Calcasieu Paper Company addition designed by Alvin H. Johnson & Co., Inc.

These Spherical Roller Bearings automatically compensate for deflection, preventing the development of binding stresses. Rolls turn smoothly and freely, with minimum power input. Periodic alignment adjustments are not needed.

Special Torrington Ladder-type Roller Bearing mountings are employed on the tending side of paper and felt dryers to allow for axial expansion and contraction.

In all types of heavy-duty machines, Torrington Bearings are providing smooth, reliable performance. Consult a Torrington engineer for recommendations in applying any major type of anti-friction bearing to your equipment.

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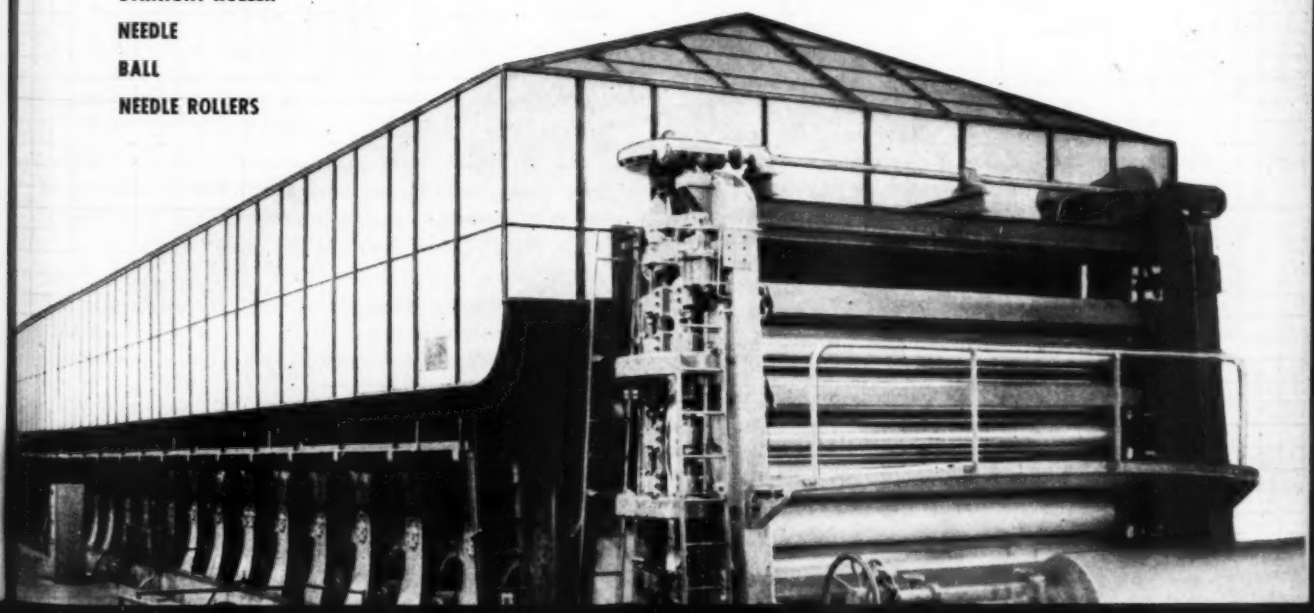
TAPERED ROLLER
STRAIGHT ROLLER
NEEDLE
BALL
NEEDLE ROLLERS



Editorial

Newsprint prices . . . a sign of the times

SCARCITIES OR PROHIBITIVE PRICES normally bring substitution of any long-used, staple commodity. Thus, today, we have many synthetic products. But the steel industry claims that even with the increased cost of steel, from the standpoint of service, people still can buy steel more economically than any substitute material.

This conclusion is analogous to one commodity in the papermaking industry which is now under a scrutiny of analyzation because of price increases. Is there any substitute for newsprint? So far, there is not! Then why has the announcement of a price increase on this commodity raised such a storm of opposition?

Printing machinery costs more because of a general over-all price raise; skilled printers periodically ask for higher wages to meet the upward cost of living; business men who use space in newspapers pay higher rates to advertise their merchandise and add it to their selling costs. Does it not, then follow that the basic commodity needed for this great communication media also should share in the higher prices?

When six large Canadian newsprint suppliers raised their prices late last month, there was immediate resistance from affected groups. One of the most outstanding objectors was the National Dry Goods Association, New York City, whose president sent a letter of complaint to R. M. Fowler, president of the Newsprint Association of Canada. The basis of this complaint, of course, was the inevitable raise in advertising costs that would ensue and certainly would add to the inflationary spiral.

Mr. Fowler's reply to this complaint brought out such a wealth of basic facts supported by pertinent data that it seems fitting to present here some of his comments:

"Until the recent price announcements, prices for Canadian newsprint had remained constant since August 1, 1948. . . . Meanwhile, prices of many commodities have been rising, especially during the present year. I see that the U.S. retail price index, prepared by your Department of Commerce, has risen from 183.3 in February to 190.4 in August (the last figure available). The Canadian newsprint price index has been constantly and steadily below the wholesale commodity price index in the United States.

"The cost of making newsprint has increased rapidly in the last two years, while Canadian newsprint prices have remained unchanged. Wages have increased each year, both in the U.S. and Canada, and in recent weeks another 5 per cent wage increase has occurred for some companies, and other negotiations are in process. Pulpwood that is now being cut is likely to cost $3.00 to $4.00 a cord more than last year, and it takes over a cord of wood to make a ton of newsprint.

"On the other side of the picture, there is a constantly rising demand for newsprint. The manufacturers have many requests for more supply from publishers in Canada and the United States. In overseas markets there are a number of really serious situations developing that go far beyond commercial considerations. In many countries that are vitally important to your country and to mine, there is not enough newsprint to meet the minimum essential needs of informing the people of world events. . . . . Meanwhile, the United States, with 7 per cent of the world's population, received last year 60 per cent of the world's newsprint production. In the first nine months of this year, total U.S. supply was nearly 275,000 tons more than in 1949.

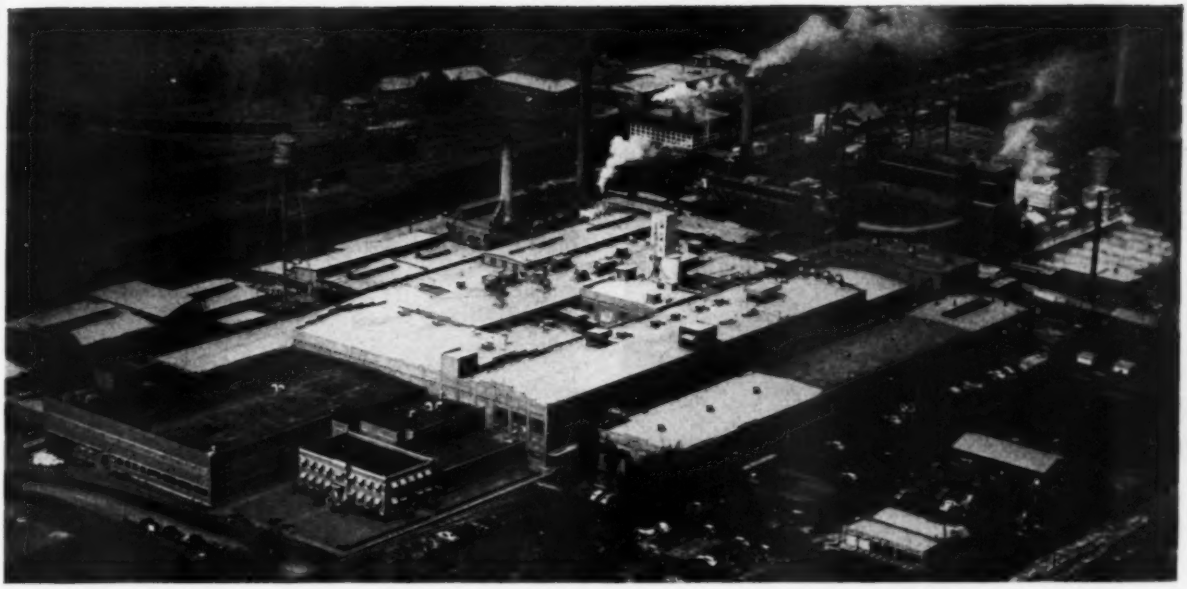
"Most of this has come from Canada and has resulted from expansion of newsprint capacity to meet rising U.S. demand. It is a good record of service and reliability. Canadian productive capacity has increased by nearly 600,000 tons in the last four years, and this month the industry is expected to operate at 103 per cent of this expanded capacity. This has been achieved by plant improvement and speed-up of machines. It has cost large sums of money, and any further expansion will cost more money. . . . If more newsprint is needed, there must be more investment in newsprint mills, and the money to make this investment and to support it after it is made must come out of the price of newsprint. This is a simple fact that is equally important to newsprint manufacturers, newspaper publishers, and advertisers.

"Another simple fact that speaks for itself is the history of new mill construction in Canada since the war. There have been ten pulp and paper mills constructed or reopened in the last five years in Canada. Although the demand for newsprint has been steadily increasing, not a single one of these ten mills has been for newsprint. For some reason, the newsprint production does not seem to have been attractive to new capital."

"There is considerable misunderstanding of the size and importance of newsprint costs in the publication of a newspaper. Much is heard about the threat to small newspapers from an increased price. The facts, as published by *Editor and Publisher* are that newsprint and ink together represented the following percentages of total newspaper publishing costs in 1949: For circulation 10,000 to 25,000, 14.95 per cent; 25,000 to 50,000 circulation, 18.53 per cent; 50,000 to 100,000 circulation 28.20 per cent. Over 100,000 circulation, 37.63 per cent, with a composite average of 24.82 per cent. . . . . How can a 6 per cent increase in newsprint prices create a threat to newspaper solvency? It is nine-tenths of one per cent increase in total publishing expense of the smaller papers, and one and a half per cent increase in the average over-all costs of American publishers. Is the margin between life and death as narrow as this"?

As this issue closes, six Canadian mills have raised newsprint prices: International Paper Sales Co. has gone up $6.00. Consolidated Paper Corp., St. Lawrence Paper Mills, Great Lakes Paper Mills, Powell River Co. and Abitibi have raised prices $10.00. Our U.S. mills have joined up—Coosa River announces a $6.00 increase; Inland Empire makes it $10.00. Crown Zellerbach has announced a $6.00 raise applying only to product of its American mills.

Analyzing all the facts, and applying the fundamental law of supply and demand, it seems that newsprint price raises cannot be considered inflationary "cause" but rather an effect or *"A sign of the times."*



Aerial View of The Mead Corp., Kingsport (Tenn.) Division, taken during construction. This picture was taken after installation of dust collectors—all plumes coming from various stacks are water vapor with exception of slight haze from the boiler house stack

Mead's Kingsport Division Soda Mill Modernized

An excellent example of the application of technique and equipment to the manufacture of pulp and paper with consideration given to the lessening of stream and air pollution and improved ventilation

▶▶▶ KEEPING PACE WITH the paper industry's postwar trend toward better products, greater output and realistic costs, The Mead Corp. Kingsport Division, Kingsport, Tenn., recently completed an extensive mill modernization project. In full-scale operation for the past several months, it already has demonstrated the potentialities in new processing efficiencies and increased operating economies.

The project, signalizing another phase of a long-term expansion-improvement program, aptly reflects management's belief that increased efficiency and productivity will provide the means of keeping pace with continued heavy demands for the company's quality book, magazine, and converting papers.

Launched right after the end of World War II, the project serves as an interesting case study of what can be achieved through modern process engineering techniques and equipment integration, and provides new productive life in a 30-year-old soda pulp mill. Also, it illustrates a practical approach to the increasing interest in reduction of stream and air pollution. This problem, common to all industry in view of concerted emphasis on better community relations, holds particular significance to modern mill management men.

Briefly, the initial efficiency-reconversion job completed by Mead engineers at their Kingsport Division mill embraced the building of a lime kiln, installation of six modern pulp digesters with auxiliaries, a new soda recovery furnace, equipping boilers with fly ash collectors, and improving the mill ventilating system.

Lime Kiln

Changed economic conditions and management's efforts to reduce the material waste in process made a new lime kiln an item of importance for the Kingsport Division. In causticizing, liquor for cooking pulp is made by reacting soda ash with lime. A by-product of this reaction is lime sludge which, upon reburning, produces lime that can be recycled to the causticizing operation. Hence, fresh lime purchased on the market is replaced or reduced substantially, effecting an important saving in this essential pulp and papermaking material.

Mead has recognized for years the desirability of burning lime for this purpose. Until recently, however, the low delivered price of new lime outlawed the equipment investment cost-wise. Also, with a certain portion of this sludge used as filler in paper, experiments were being carried on at Kingsport directed toward furthering such use. As a result, surplus sludge, by and large, was washed to the sewer with other mill effluents, but the economic perspective of this general picture changed as lime prices continued to advance.

Engineering design, purchase and installation of the new Allis-Chalmers lime kiln were handled by Tidewater Construction Company, Norfolk, Virginia, in co-operation with Mead engineers. Construction of the unit, 9-ft. in diameter and 170-ft. long, was started in March, 1948. Put into production eight months later, the kiln has since turned out approximately 40 tons of burned lime per day from 65 to 70 tons of lime mud (62 per cent moisture content) from the causticizing operation (using about 3,000 gallons of fuel oil for burning and about 2700 kw-hrs. of electricity to turn the kiln and its air blowers, pumps and other auxiliaries.

Section of the old pulp mill adjoining original digester chip bin house in background, and rotary furnace chemical recovery building in foreground

Digester charging and operating floor, shown here, is located immediately below the large capacity chip bins equipped with a Redler chip distribution system

Upon leaving the kiln, gases formed in burning the lime sludge are passed through a Rotoclone-type scrubber, thereby minimizing objectionable fly ash pollution through their release to the atmosphere. Results obtained to date with this new lime kiln have been somewhat better than expected. Quality of lime produced is very satisfactory, and discharge of sludge into the sewer is now negligible, having been eliminated entirely for all practical purposes. While operating costs on the basis of present tonnage requirements are higher than first estimated, they are still low enough to show worthwhile economies.

New digesters

The second major postwar improvement made by Mead at its Kingsport Division Mill called for the replacement of ten digesters which, in continuous service for over 20 years, had been worn so thin in places by the errosive action of caustic soda cooking of pulp that these pressure vessels no longer could be operated safely at required steam pressures. Production losses ensued in operating the units at reduced pressures.

This job was not one of merely replacing the digesters in duplicate as had been the case in 1925. Rather, it demanded integrated design engineering, as their installation would furnish the first step in what ultimately will be modernization and expansion of the total old mill. As such, Mead's management specified that the new digesters incorporate all the features representative of modern engineering concepts and consistent with good chip-cooking practice. Among the refinements sought were increased capacity, forced circulation of liquor, automatic relief, full instrumentation and efficient heat recovery.

Other important considerations also were involved. The digesters had to be conveniently located and their operation effectively co-ordinated, so as to become a basic part of an integrated process layout and operations plan for the entire mill. Moreover, they had to be planned, delivered and installed as quickly as possible. Meanwhile, production of the old equipment had to be maintained at a relatively good level until the new units could be put into operation.

Teamwork between Mead technical personnel and engineering consultants cut the Gordian knot on this complicated problem. For Mead, important contributions were made by development, operating, engineering and supervisory executives. Preliminary and semi-final design work was handled by the Hardy S. Ferguson Co., but the final designs and construction were handled by the Austin Co.

Construction of six digesters, started in early 1948, were completed in the spring of 1949. Production performance of these units, together with their controls and auxiliaries, is proving the value of careful design and control features. Built by Blaw-Knox, the digesters are 11-ft. in diameter and 49½-ft. high, with a pulp capacity per unit of 10 tons and a volume of 3900 cu. ft. of chips per charge. Presently, these digesters are producing 140 tons of pulp daily, but they are designed and engineered to provide a maximum capacity of 225 tons per day.

Auxiliaries include six liquor heaters and six 2500-gpm. liquor-circulating pumps made by Fibre Making Processes Co., a Swenson heat recovery system, Salem elevators, Stephens Adamson chip conveyors, Foxboro automatic controls and instruments and DeLaval stock and water pumps of from 300-gpm. to 1000-gpm.

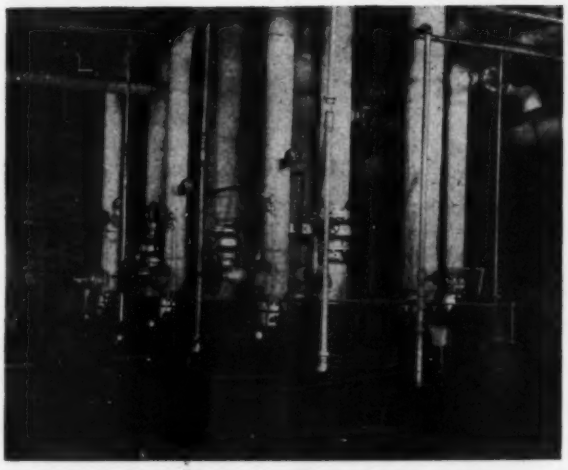
Two conveyors

The chip conveyor system, running from the chipper screens to the chip storage bins, is worthy of special note in that it has been designed expressly to provide for a better, more even distribution of chips and so increase chip bin capacity. There are two conveyors. The first is a 30-inch rubber belt running from chipper screens to a belt bucket elevator, 120-ft. high, and has a capacity of 80 tons per hour traveling at 300-ft. per minute. Above the chip bins is a Redler run-around conveyor equipped with a series of special gates. With chips distributed more uniformly, chip bin capacity has been increased approximately 50 per cent. All pumps serving the digesters are automatically controlled with pushbuttons.

Soda recovery system

At the Kingsport Division mill, as in others making pulp from hardwoods by the "soda process" (cooking the chips with caustic soda as the chemical reagent), it is customary practice to use furnaces and auxiliary equipment for partially recovering caustic in the spent liquor drained off the newly-cooked chips. Since 1916, when the first recovery setup was installed at Kingsport, the arrangement utilized consisted of an evaporator to condense the liquor to about 50 per cent solids, a rotary furnace or incinerator, a fire-pot or furnace for coal burning heat, and a small fire-tube steam boiler through which exit gases pass prior to discharge into the atmosphere.

Between 1916 and 1941, Mead installed at Kingsport six such integrated units, with a total capacity of 132 tons. Chemical recovery approaching 90 per cent is possible with consistently efficient operation, but 85 per cent is regarded as



Here is shown the result of careful engineering and execution of the installation of turbine-driven feed water pumps for the 900 psi recovery boiler

Four of the eight fresh air intakes supplying filtered air to the more recent addition to the mill ventilating system. Air distribution units are placed at strategic points

good performance. Recovery of as low as 75 per cent is not unusual. Chemical recovery, however, presents its problems. Labor and maintenance costs, for instance, are frequently rather high, heating value of the carbon in the liquor is largely wasted, and steam output is low. Furthermore, due to low unit capacity, a multiplicity of units is required. Add to these the problems of waste disposal caused by the emission of heavy clouds of smoke and dust into the atmosphere, and carbon residue in large amounts which must be washed to the sewer.

Interest of the Mead management in curbing and controlling the disposal of these wastes antedates the postwar period by a good many years; in fact, it goes back to 1930, when the company installed at its Chillicothe, Ohio, mill a new type liquor recovery furnace that gave promise of operating with infinitesimal air and sewer loss. A similar trial installation was made in 1939 at the pulp mill in Brunswick, Ga. Thus having contributed through these pioneer trial installations to the development of this furnace, it was only natural that in 1947 the company specified two of the latest designs—one, made by Combustion Engineering, for the Mead mill in Georgia; the other, made by Babcock & Wilcox, for Kingsport.

Ground was broken for the Kingsport unit in February, 1948. The first liquor was burned in July 1949. Following a three-week "shakedown" period, this furnace took over the Kingsport Division's entire liquor burning and soda recovery load.

After evaporation to a solution of better than 60 per cent solids and 40 per cent water, the pulp mill liquor is burned in this furnace (18-ft. wide, 21-ft. long, and 70-ft. high) in a mist-spray form produced by steam-atomizing nozzles similar to those found in conventional fuel oil burners. Greatest portion of the chemical present in the liquor then drops to the chrome-ore-faced furnace bottom and flows as a red-hot molten stream of "smelt" through spouts into a heavy brick-lined tank. Here, aided by vigorous agitation and pumped recirculation, it dissolves in liquid and is pumped to the causticizing department for treatment and reuse.

Tubes forming the furnace walls constitute an integral part of the water-circulating system of what, in effect, is a huge central station type of high-pressure steam boiler. It absorbs radiant heat of the furnace flame and heat of gases flowing through the boiler, economizer and air heater tube sections, and generates steam at a pressure of 900 psi. and a total temperature of 750° F. Furnace and boiler are designed to provide 107,000 lbs. of steam per hour at 900-lb. pressure and 750 F. superheat, based on 225-ton daily mill pulp production.

Leaving the boiler, gases pass through a scrubber or cyclone evaporator tower, which recovers dust carryover. Then, before discharging into the atmosphere, gases flow through a Koppers electrical precipitator, which collects all but a trace of the remaining residue of dust. With this furnace and auxiliaries, only a light white plume of fog—mostly condensing water vapor, or the water that was present in the liquor as it entered the furnace—is emitted from the chimney.

Pumps

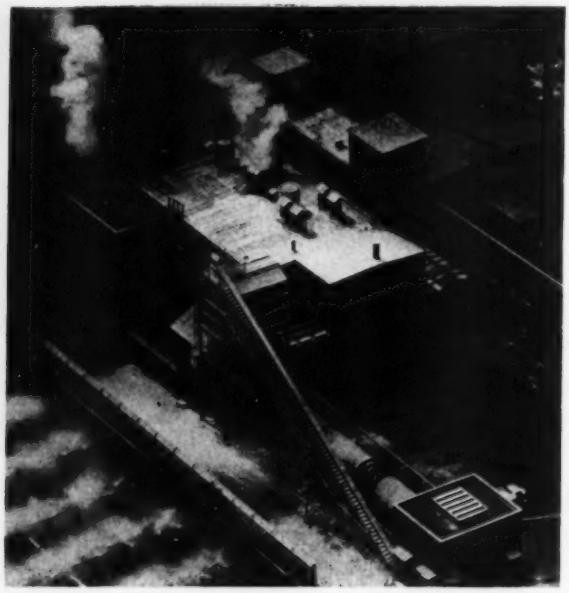
This soda recovery furnace installation is equipped with three turbine-driven, automatically regulated DeLaval boiler-feed water pumps, which provide a capacity of 300 gpm. against a maximum net total dynamic head of 3000-ft. handling feed-water at a maximum temperature of 228 F. These five-stage pumps discharge into a stage heater, a deaerating type Cochrane unit specially designed to handle maximum feedwater output of 200,000-lb. per hour. Feedwater enters heater at 228 F. and leaves at 268 F. Heating medium is 30-lb. steam at 350 F. The DeLaval turbines operate on a steam pressure of 140 psi. gauge 460 F. at the throttle and exhaust at 5-lb. or 35-lb.

The boiler is equipped with a Diamond Power Specialty Air Puff and I. K. Soot Blowers, which are automatically controlled from a panel located on the operating floor 20 ft. above grade. Other auxiliaries are liquor pumps (Worthington, (DeLaval), forced and induced draft fans (American Blower), and feedwater-treating equipment (Permutit).

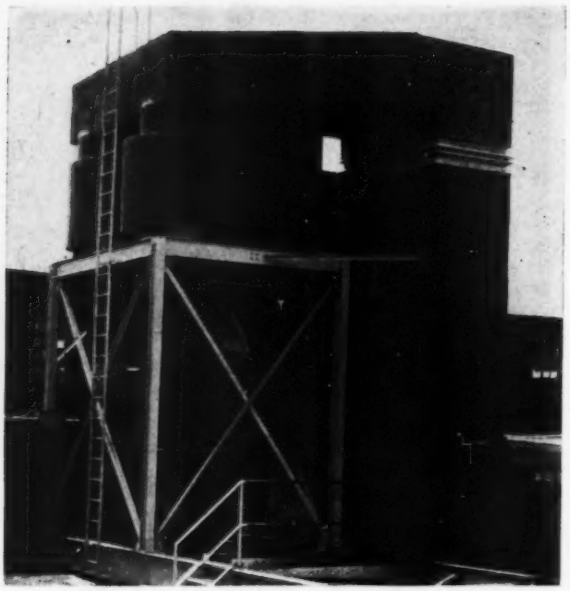
Efficient dust and smoke control

When the City of Kingsport put its dust and smoke control ordinance into effect in June, 1948, the problem of eliminating or reducing dust output from three pulverized coal-fired boilers at Mead's Kingsport Division Mill had been under scrutiny by company engineers for over five years. As the initial approach, larger slow speed induced draft fans had been installed to provide required draft for boiler operation with fly ash collectors. Following careful study and analysis, Mead's division engineering staff recommended to management the purchase of high efficiency Buell mechanical dust collectors to comply with the local ordinance.

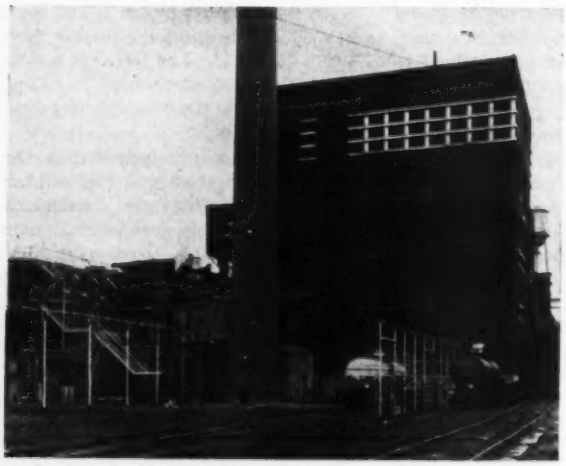
Engineering details in combining these units into a co-ordinated system, with higher capacity drive units for induced draft fans, duct work, controls, etc., was handled by the division engineering de-



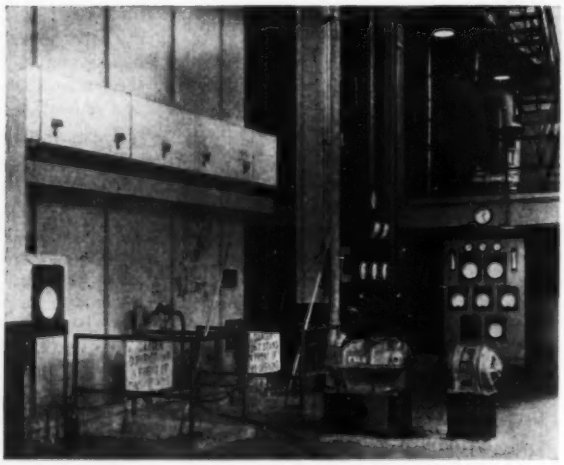
New lime recovery kiln (Allis-Chalmers) has been installed adjacent to the causticizing building with reburned lime storage conveniently located above the kiln. Unique conveyor installation (Stephens-Adamson) in foreground



One of the three Buell fly-ash collectors located on the roof of the steam generating plant. The local smoke and dust control ordinance required that dust output from the Mead plant be substantially reduced or eliminated



Building housing Babcock & Wilcox recovery furnace and boiler. Located immediately behind the stack breechings is Koppers electrostatic precipitator. At left may be seen recently installed quintuple effect evaporators. Relocated liquid chlorine unloading station is in foreground



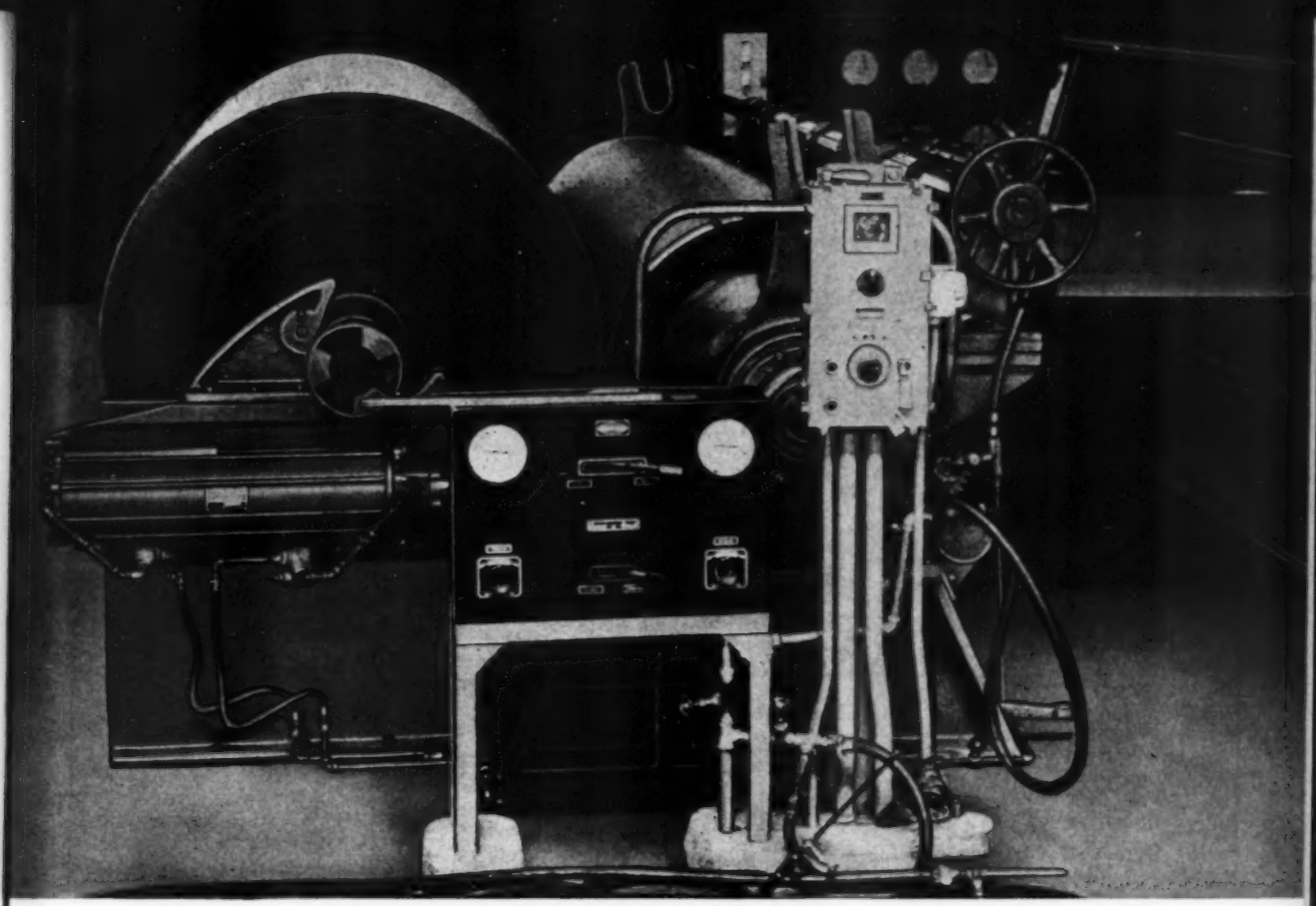
Partial view of recovery furnace operating floor. Cochrane water heaters in upper background. Furnace operators can clean the smelt spouts with comparative safety (See guarded areas in foreground). Smelt dissolving tank is located just below drive unit in foreground

partment. Installation was made by the division maintenance department. Power plant load conditions and delivery delays on some essential auxiliary equipment items prevented completion of the work in July 1949, as originally scheduled. However, in October, when a continuous flow of steam became available from the new soda recovery unit, the boilers were scheduled for shutdown, one at a time, for final tie-in of the collector systems.

Boilers are operating with a dust load of less than 0.35 grains per cu. ft. when figured at a temperature of 350 F., and when gases do not contain more than 50 per cent excess air—the specified limits of the Kingsport dust and smoke control ordinance.

Ventilation plan co-ordinated

Improvement of paper mill ventilation was the final step in Mead's immediate postwar modernization project for its Kingsport Division. A paper machine room in any latitude is at best a warm place to work during the hot, humid summer months, and this problem was aggravated in Kingsport by space limitations among other factors which, through the years, had resulted in grouping buildings so closely together that effective natural ventilation was next to impossible to achieve. Increased machine speeds in the immediate postwar period simply added fuel to the fire, so to speak, leading to numerous complaints due to uncomfortable working conditions. (*Turn to page* 837)



Puseyjones Improved Type Uniform Speed Reel with pneumatic adjustable loading mechanism.

Reel Changes Simplified

The role of the Reel in paper-making at today's high speeds is an important one. An inefficient, old-type Reel will hamper production, cause high "broke" and result in increased tonnage costs.

The Puseyjones Improved Pope Type Uniform Speed Reel is outstanding for simplicity of operation. Many of America's leading mills, and mills in other countries, have included this improved type Reel in their modernization plans with profitable results.

An outstanding feature of this Puseyjones unit is the pneumatic adjustable loading mechanism which greatly simplifies reel changes and gives added safety to the operation. There's no loss of valuable production time. Operation is at constant paper speed. Controlled tension and accurate roll-to-drum pressure results in uniform rolls. Smoother winding and ease of operation are additional features.

Find out how a Puseyjones Improved Pope Type Uniform Speed Reel can improve your production and give you more uniform paper rolls for better profits. Write us today.

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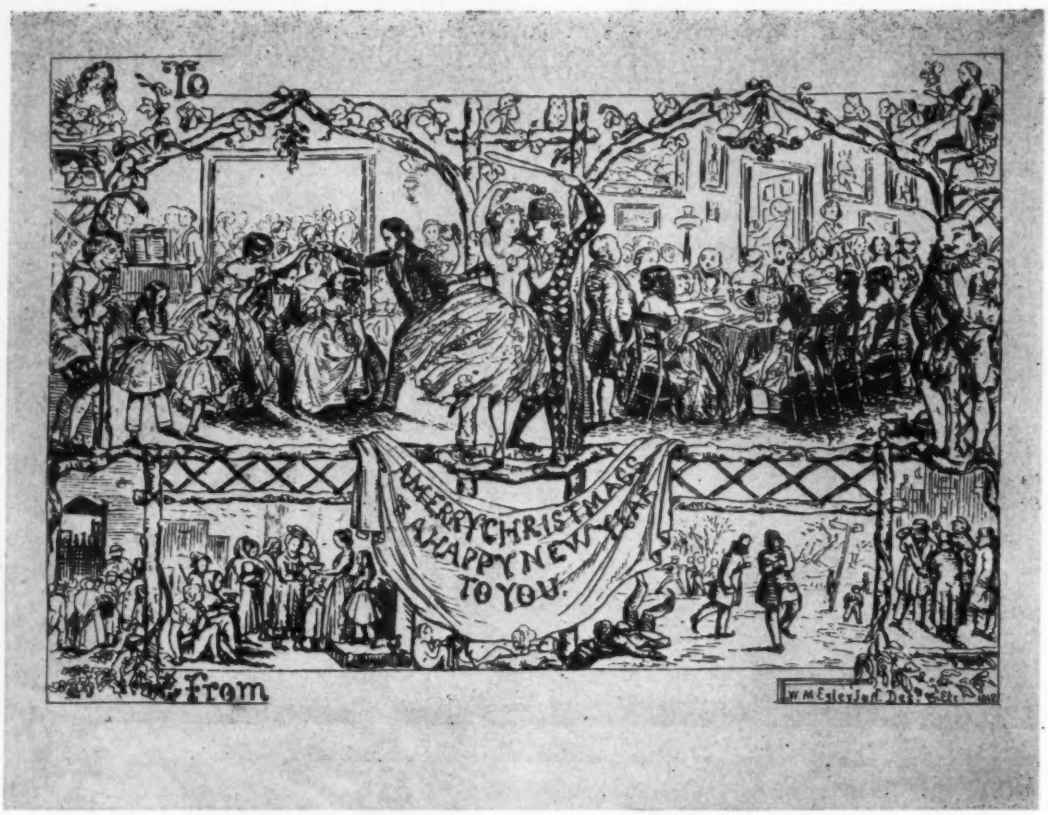


Facsimile of the first-known Christmas Greeting Card. Original now on display in the British Museum in London.

The First Christmas Card

When, in 1842, William Maw Egley, a young London engraver's apprentice, produced the first-known Christmas card, he started what was destined to become both a popular custom and a major industry. While the Christmas card originated in England, the sending and receiving of greeting cards has attained its greatest popularity in America. Today more than two hundred greeting card publishers produce more than three billion cards annually. It is estimated that nearly one hundred million dollars is now spent each year to mail greeting cards of all types and for all occasions—a sum representing approximately ten percent of the Government's first-class mail revenue.

In reaching such a vast volume, greeting cards have become one of the largest users of paper, and thus have made an important contribution to the swift, continuous growth of America's pulp and paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

KENWOOD WOOL PRODUCTS HUYCK *Felts*

F. C. HUYCK & SONS · *Kenwood Mills* · RENSSELAER, N. Y.

Generally speaking, such complaints are normal with the advent of hot weather, and for that reason, the degree of discomfort to workmen caused by the combination of hot weather and higher machine operating speeds was not immediately apparent. Once the facts were uncovered, however, management acted promptly to remedy the situation.

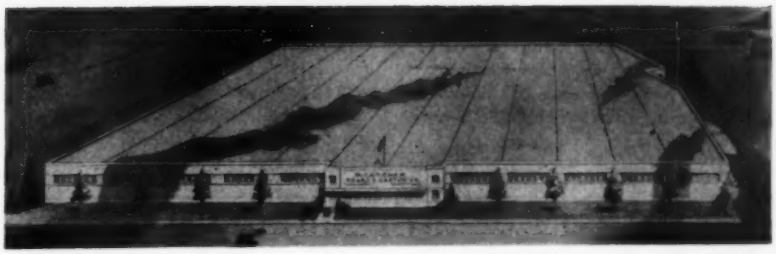
The result — a substantial improvement in working comfort to finishing room and machine room operators— stems from a plan utilizing Ross equipment which provides for supplementing existing ventilation. This is achieved by forcing about 400,000 cfm. of fresh, filtered outdoor air into the finishing room basement (basement floor being at ground level), which thus becomes a plenum chamber from which individual ceiling fans, strategically located, blow air up and out to the operating area above in more or less horizontal, diffused and directed streams at moderate velocity about four feet above the floor.

At the same time, air removed from heat sources (such as super calenders and paper machine dryers) was increased by installing more and larger exhaust fans and natural vent stacks— all with the idea of developing a total exhaust capacity well exceeding 400,000 cfm. forced input.

During the cold winter months, about 200,000 cfm. input to the basement plenum chamber is passed over steam coils with automatic control to 60 F. The regular winter heating and ventilating units for two paper machine rooms pick up this air and deliver it to proper points of application. The balance of winter heating and ventilation is supplied, as in the past, from fan and heater units located above the roof and delivered through ducts to the points of use in the room below.

It has been pointed out elsewhere that no company can "expect to be recipients of local good will without doing those things that *earn* good will." By means of the five-point program reviewed, Mead management feels it has made a big step forward toward the attainment of this vital objective and has given our mill a new lease on life—greater productivity with a lower cost potential. These are gains which we expect will increase still further as our long-term modernization and expansion program is brought to an orderly completion.

A ONE-STORY PLANT which will cost approximately $3,000,000 is being planned by Hinde and Dauch Paper Co. of Canada Ltd., Toronto, Canada, for construction outside Toronto. The 260,000 square foot plant, to be located on 12 acres of land recently purchased by the company, will employ about 250.



Gardner Board and Carton Marks 50th Year by Building New Retail Box Plant

Main feature of the golden anniversary celebration held recently at Gardner Board and Carton Co., Lockland, Ohio, was the laying of the cornerstone of a new retail box plant. Edward T. Gardner, president, general manager and director of the company—and the only living co-founder of the firm—used a golden trowel to apply the mortar which sealed the cornerstone of the new building in a simple ceremony witnessed by representatives of the Lockland community, management and employees.

In his dedication address Mr. Gardner remarked, "I hereby dedicate this building as a lasting pledge of co-operation between management and men—company and community. This golden trowel which I hold in my hands is a symbol not only of our 50 years of achievement, but also of our confidence that people working together in the American way can build solidly for the years to come."

Called a demonstration of the company's belief in the future of the American way by Mr. Gardner, the new retail box plant is being constructed directly opposite the grounds of the present plant and offices of the firm's board, carton and mill operation.

Edward T. Gardner

Measuring 447 x 282 feet, the million dollar building designed by Carl H. Martin of Middletown, Ohio, will be constructed by Penker Construction Co., Cincinnati. A one story structure, the plant will be made of reinforced concrete and steel with buff colored brick facing.

Architectural and engineering design of the new retail box plant will include numerous innovations to make operations adaptable to modern working techniques. Typical of the features which will allow employees to work at maximum efficiency and comfort will be lights so installed that spot shifting will allow illumination to be placed directly on the operational location desired.

When the plant is completed early next spring there will be an expansion of the company's folding carton operations at Lockland, in production space freed by the removal of the retail box fabrications to the new plant area.

More Tests Conducted for Burning Waste Sulphite

From time to time, tests are being conducted by various mill-members of the Sulphite Pulp Manufacturers' Research League, Inc., the organization through which Wisconsin sulphite companies carry on their scientific and engineering studies to find and improve ways for reducing sulphite pollution.

The special pilot-plant furnace built this summer by Northern Paper Mills at its Green Bay (Wis.) plant for experiments in burning spent sulphite liquor as industrial fuel was given its first full-scale test on October 16, according to Milan Boex, company president.

Besides participating executives, engineers, and technical staff of Northern Paper Mills, the test was watched by A. F. Sidlow, air pollution engineer, City of Green Bay, whose interest in the process is primarily in the control and suppression of fly ash which may be incidentally produced. Data yielded by the test were also forwarded to Averill J. Wiley, technical director of the League, in Appleton.

Purpose of the unit is to preheat the concentrated sulphite liquor, after its evaporation to a 50 per cent solids form, so that its 50 per cent water content will not extinguish the fire, and thus will allow the solids in the liquor to burn.

Twenty-eight top technical men of the Wisconsin paper industry gathered in Niagara, Wis., October 18 to see sulphite liquor burned experimentally as industrial fuel. The demonstration test was conducted at the Niagara mill of Kimberly-Clark Corp. by combustion ex-

perts of its technical staff in the presence of technical directors, engineers, and scientists of twelve other mills which have the problem of disposing of spent sulphite liquor. League representatives also were present.

Preliminary tests were held at the Niagara mill about two months earlier, using 6000 gallons of sulphite mill effluent which had been concentrated to 52 per cent solids content. Experience with that test brought out the need for some changes of techniques. The most recent tests will finish up 16,000 gallons of similarly concentrated waste material. The Appleton pilot evaporator plant of the Research League evaporated 105,000 gallons of spent liquor to produce this quantity of the material for burning as fuel.

AWP Completes Long-Range Reorganization Plan—Will Operate Six Mills

A rehabilitation program begun ten years ago by American Writing Paper Corp., Holyoke, Mass. has been completed at a cost of more than $1,000,000. All unprofitable units of the company have been closed, and unused properties have been sold. Hereafter, the company will operate six mills with a total of ten paper-making machines.

The six mills remaining after sale of Beebe-Holbrook, Wauregan, Parsons, and Riverside No. 2 divisions have been modernized, and are all running at capacity. The divisions retained by the company, and improvement programs completed at them, are:

Linden Division—A new modern filter plant, a rebuilt steam plant, oil firing installation, modern winders, save-alls, jordans.

Nonotuck Division—New hydrapulper, jordans, save-alls, overlapping layboy cutter; modern Windsors on machines; additional machine dryers, hoods on both machines and a Grewin system.

Mt. Tom Division—Installation of a complete improved roll pasting machine.

Crocker Division—The No. 2 machine has been completely rebuilt to manufacture lightweight papers by the addition of new screens, a modern head box, suction couch roll, adjustable slices, new save-alls, drives calenders, and winders. Machines 3 and 4 have been given added screen capacity, new jordans, an improved type of beaters, new drainage systems, improved fourdrinier sections and new winders; No. 3 machine has a new cutter.

Gill Division—This division has an entirely new wet end, a Ross Absorption System, Hydrapulper, Extractor Roll, and large Vortrap.

Albion Finishing Division—The building at Albion has been entirely revamped to provide centralization of finishing room operation. Overlapping layboy cutters and modern Seybold trimming knives have been installed, and the air dryer rebuilt.

Many other departments of the six mills, including central power and office facilities, have been remodeled and improved to provide the most efficient use possible of manpower and machines.

Training Course for Sales Force Installed by Hudson Pulp & Paper Co.

In anticipation of the day when a normal market has replaced the current seller's market, Hudson Pulp & Paper Corp., New York, is now actively promoting a program of sales aids to the paper merchant.

S. W. Franklin

The first step in the program was a two-week training period given to the national sales force recently in New York. Under the direction of S. W. Franklin, director of merchandising, the salesmen devoted much of their time during the training period on lectures and discussions about the problems of paper merchants. Feeling that it is important for the manufacturer to assist the merchant in every way possible, Hudson's salesmen were taught how the merchant's problems can best be solved.

Those in attendance took part in a new Hudson training course for paper merchants' salesmen. The course, called "Modern Salesmanship," demonstrates basic selling techniques which, if properly understood and used, can sell all types of paper merchandise. T. H. Mittendorf, vice president in charge of sales, stated that Hudson considers underwriting this program a sound business investment because it will help paper merchants' salesmen do a better selling job on Hudson products.

I. P. Co. Plans Reopening of Hartford City (Ind.) Mill—Will Recall Former Employees

Plans have been announced by International Paper Co., New York, to reopen the company's operation at Hartford City, Ind., which has been idle since a lease for operations let to Fort Wayne Paper Co. expired on June 30, 1948. The mill, originally owned by the Fort Wayne firm, had been sold to International Paper when the use of linerboard supplanted the use of jute. International put the mill into retirement, but leased it to the original owners when World War II made kraft linerboard scarce and jute once more important; the mill was once more taken out of production when that temporary need ceased. (Cf. P. I. and P. W., July, 1948).

About 125 men will return to work in the plant, which will recall nearly all members of the former supervisory force to their old positions. Beryl Jackson will be mill superintendent, and Thomas M. Nagle will be agent.

Weyerhaeuser Will Expand Longview Pulp Division

A contract has been awarded to L. H. Hoffman of Portland, Ore., by Weyerhaeuser Timber Co. for an addition that will nearly double the capacity of Weyerhaeuser's new kraft pulp mill at Longview, Wash. The addition, which will increase the mill's production from 200 to 220 tons daily to about 375 tons, will reportedly cost several million dollars. The plant will utilize saw mill waste, low quality logs and other wood products.

Concurrently, Weyerhaeuser has awarded Mr. Hoffman the contracts to enlarge the Springfield, Ore., operations. Expansion there will include enlargement of the pulp mill, several sawmill additions, and a new Prestolog operation.

Everett Pulp and Paper Installs 4th Paper Machine

Preparations are being made for the installation of a new paper machine at the Everett Pulp and Paper Co. mill in Everett, Wash. The machine, the fourth to be installed, will increase paper tonnage at the plant fifty per cent, bringing production to approximately 50,000 tons of paper yearly. The present company employment of 150 will be increased to 200 workers.

Purchased to manufacture grades of paper similar to that now being produced by the company, the new unit has a width of 160 inches. Manufactured by Pusey and Jones of Wilmington, Del., who furnished all three of the paper machines now being used in the mill, the new machine will be equipped with all modern devices.

The new machine should be ready for operation in the first quarter of 1951.

AN EQUIPMENT ORDER placed by Northern Paper Mills, Green Bay, Wis., with J. O. Ross Engineering Corp., includes a Trim conveying system, hood and vapor absorption system for the company's Yankee machine.

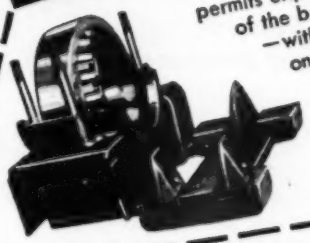
TRAIL BLAZERS to more efficient paper production

Four important developments in paper-making efficiency—some of which are becoming standard practice with bearing manufacturers, *originated with* SKF.

THE FIRST

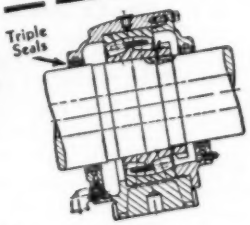
Spherical Roller Bearings applied to paper machinery, with results of smoother paths for power and real operating economies, were SKF Bearings.

THE FIRST



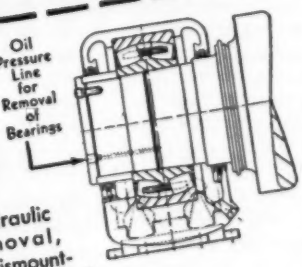
Rocker Mount Design, which permits expansion and contraction of the bearings and driers —with no lateral stresses on the side frames, was an SKF development.

THE FIRST



Triple Seals, for efficient non-rubbing sealing that retains lubricant independent of speed and temperature, were designed by SKF.

THE FIRST



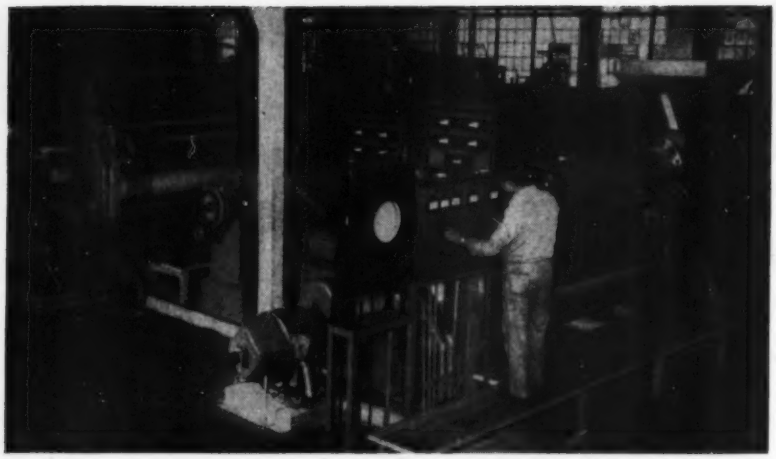
System for Hydraulic Bearing Removal, where such dismounting of large or small bearings becomes a rapid and easy operation that eliminates damage to bearing and housings, was originated by SKF Engineers.

SKF
BALL AND ROLLER BEARINGS

Yes, SKF, in the paper industry as well as many others, has blazed the trail to more efficient, economical, reliable production. And right now, SKF Engineers in cooperation with machinery builders are *anticipating* the needs of advanced designs of paper machinery — so that years from now production will be even more efficient. **SKF** INDUSTRIES, INC., PHILADELPHIA 32, PA., *the Pioneers of the Deep Groove Ball Bearing—Spherical Roller Bearing—Self-Aligning Ball Bearing.* 7100

8 REASONS WHY SKF IS PREFERRED BY ALL INDUSTRY

Integrity — Craftsmanship — Metallurgy — Tolerance Control — Surface Finish — Product Uniformity — Engineering Service — Field Service



Newest polyethylene-coating equipment placed in commercial production recently at the Carthage, N.Y., mill of St. Regis Paper Co. Kraft paper moves through a series of rolls at the front of the machine to receive the plastic coating and is then carried to the rear of the machine for rewinding and slitting.

St. Regis Operates Second Polyethylene Coating Machine

New demand for plastic coated papers has made it necessary for St. Regis Paper Co. to increase its facilities for coating kraft paper with polyethylene. In order to meet this new demand, the company announces that its second, and larger, polyethylene coating machine has been placed in commercial production at the Carthage (N.Y.) mill. The first coater to be built by any multiwall bag manufacturer went into operation more than a year ago at the St. Regis bag plant in Oswego, N.Y.

This heavier demand indicates that kraft papers coated with polyethylene are finding many important uses in today's economy, above and apart from the shipping sack applications. Polyethylene is particularly adaptable as a protective barrier ply in wrapping machinery and equipment parts to prevent corrosion during transit. This factor is particularly important for military transport purposes, and is expected to open many possibilities as new military utilizations are found for the product.

The Oswego machine has a 1000 pounds of coated paper capacity per hour and a 54-inch maximum trim. Major parts of the 10-ton coater were built to St. Regis specifications. The machine is designed to operate in a range from 50 to 600 fpm, depending upon the required thickness and adhesion of the polyethylene coating. Volumewise, the machine has a capacity of upwards of 3000 pounds of polyethylene-coated paper per hour in any width up to 90 inches.

The Carthage coater offers a wide range of commercial coating thicknesses, from one-half to seven mils. However, most commercial coatings to date have been 1½ mils, which is approximately equal to 20 pounds of polyethylene per ream of 24x36-inch paper. Indications are that coatings as low as five pounds may become commercially practical, although the thinnest commercial coatings undertaken in the multiwall bag field have been 15 pounds to the ream. Requirements for Poly-Wrap do not demand such thick coatings.

Crystal Tissue Constructs Addition to Plant

Announcement has been received from E. E. Grant, president of The Crystal Tissue Co., Middletown, Ohio, that work has begun on a modern, one story addition to the company's plant.

Constructed of steel, brick and concrete, the addition will be about 115 feet x 120 feet, and will provide additional shipping and storage facilities for both the tissue manufacturing firm and its subsidiary, The Crystal Waxing Co.

New Paper Machine at Howard Smith Cornwall Mill

Installation of a new paper machine at the Cornwall, Ontario, Canada, plant of Howard Smith Paper Mills, Ltd., will be another step in the long-term program of plant rehabilitation and expansion undertaken by the company. (Cf. P.I., June, 1950). Cost of this program is estimated at $3,000,000.

The new machine will increase production of the mill by about 50 per cent. The company also will expand the soda pulp mill and modernize other facilities for completion of the program by late next year.

Hammermill Employees with Service Records Honored

Nearly 600 veteran employees of Hammermill Paper Co., Erie, Pa., attended the annual service honor roll ceremony held by the company October 15 at Waldameer Park.

Long-service employees, all members of the Hammermill Honor Service Roll, were guests of the company at a steak luncheon which was followed by a ceremony honoring 118 men who this year observe anniversaries of from 20 to 52 years with Hammermill.

Nineteen employees this year completed 20 years of service, to become eligible for membership in the service club. Each of these employees was presented with an honor certificate and either a gold watch or a share of Hammermill preferred stock. Also accorded special recognition were the 33 employees who this year complete a quarter century of company service, 55 who have been with Hammermill 30 years, eight who have 35 years service, and four who have a 40-year association with the company.

Publishers Paper Co. Installs New Barker To Handle Smaller Logs

Since the Publishers Paper Co., Oregon City, Ore., acquired the old Hawley plant (Cf. P.I. and P.W., May, 1948, and June, 1947), modernization has been under way. Already completed is the replacement of a plank bulkhead by a concrete wall encasing the pen stocks leading from the east basin to grinders on a level below the old sawmill. The old sawmill has been dismantled. This bulkhead cost approximately $50,000.

The latest development is the purchase of a new barker and auxiliary equipment at an estimated cost of $85,000. This will make for additional capacity in the break-down section of the wood plant. A second barker especially designed to handle small logs, particularly those from tree farm woodlots, is to be installed. This will relieve the larger hydraulic barker from processing the smaller logs, 8-ft. lengths.

Plans for Arkansas Paper Mill Postponed

Construction of a $20,000,000 paper mill planned by White Star Paper Co. for erection near Prescott, Ark., has been abandoned for the duration of the Korean war. James R. Bemis, com-

PRECISION CUTTING

TO GUARANTEED .0625" ACCURACY

Downingtown Duplex CUTTER and SLITTER

will add up on your profit side—by cutting down TRIM waste—and pay for itself within a year. This completely redesigned machine—ruggedly constructed and quiet-running—offers you these features and advantages:

1—Shear-type, dust-free slitters, with lateral adjustment of the slitter shaft.

2—Easy adjustment or removal of the slitter while running.

3—Ease of passing sheet.

4—Greatly reduced secondary trimming.

5—Absolutely minimum waste.

Ask us to tell you more.

DOWNINGTOWN MANUFACTURING COMPANY

DOWNINGTOWN, PA.

Pacific Coast Representative: JOHN V. ROSLUND, Pacific Bldg., Portland 4, Ore.

DESIGNERS AND BUILDERS OF PAPER MAKING MACHINERY SINCE 1880

pany president, has commented that the only possibility for construction of the plant in the immediate future would be government erection of such a plant for war production, a plan which has apparently not been acted upon as yet.

Discontinuance of plans for the new mill, first discussed late last year (Cf. P.I. and P.W., Dec., 1949), will mean discontinuing, or at least delaying for a considerable time, the institution of the paper industry in Arkansas. The White Star Co., incorporated in Delaware last January, would have utilized low grade pine found in the area for the manufacture of cardboard, heavy paperboard, kraft products and newsprint. When the current Korean situation stopped further progress, the firm had already taken an option on 475 acres of land near Prescott; other options reportedly taken by the firm, although not confirmed, totaled 10,000 acres.

Pulp and Newsprint Mill Proposed for Colorado

A 24-million-dollar pulp and newsprint mill project is now being planned by a corporation known as the Columbine Development Corp. Preston Walker is president.

A site comprising 150 acres located on the Colorado River three and one-half miles east of New Castle, has been acquired. According to plan, the pulp capacity of the mill will be 450 tons per day, 200 tons of which will be used for the manufacture of newsprint. It is hoped that construction will begin just after the first of the year.

Large amounts of Colorado timber, some of it beetle-killed, will be used. The site is close to coal deposits, water and transportation. It is expected that 700 persons will be employed when the plant goes into final production, perhaps by late 1952. Bidding in Washington last March, Columbine contracted for 4,565,000 cords of western slope timber.

Final arrangements, it is said, are dependent upon the fact that the corporation must show by next June 30 that it has or can get ten million dollars to build the mill in order to clinch its contract for timber.

Central Waxed Paper Co. Invests $1,500,000 in New Chicago Plant

New equipment costing $200,000 will be installed by Central Waxed Paper Co., Chicago, in a new $1,500,000 plant to be constructed in Chicago. The one-story structure will cover 156,000 square feet on a seven-acre site, to double the space now occupied by the waxed paper firm.

A 20 per cent saving in construction steel will be effected in the building by the use of a steel cantilevered frame for the building. The over-all plan follows a straight line production layout, and will allow room for future expansion as well as a large parking area.

Completion of the new plant is scheduled for early next year.

St. Regis Plans Kraft Mill in Jacksonville, Florida

An application has been filed with the county zoning director in Eastport, Fla., by St. Regis Paper Co., for rezoning of a plant site selected by the company for the construction of a kraft pulp and paper mill in Jacksonville.

The proposed plant, which would cost an estimated $10,000,000, would employ about 1000 persons producing annually about 100,000 tons of kraft paper for use in bags and wrappings. Plans confirmed by company president, Roy Ferguson, would necessitate annual expenditures of about $3,000,000 for timber, freight and material.

Olin Industries Buys Interest in Plastic Firm

A substantial interest in Harwid Co., Cambride, Mass., has been purchased by Olin Industries, Inc., New York. There will be no change in the present Harwid management or sales distribution.

The purchase was made by Olin so that the Harwid production of polyethylene film may complement Olin's sale of cellophane. Polyethylene is a plastic widely used for packaging. Olin is constructing a cellophane manufacturing plant at Ecusta Paper Corp., Pisgah Forest, N.C.

Sefton Fibre Can Acquires Site for New Building

A wholly-owned subsidiary of Container Corp. of America, Sefton Fibre Can Co. of St. Louis, has acquired land in Piqua, Ohio, on which to build a modern building to be used for manufacture of fiber cans. Piqua was selected for the new plant because of its strategic location and good manpower conditions.

Construction on the new plant will begin in January, and should be completed by about June, 1951. About 150 people will be employed in the 50,000-square-foot building.

K-C Quarter-Century Club Entertained by Company

Long time employees of Kimberly-Clark Corp., Neenah, Wis., at Niagara Falls, N.Y., were guests of the company at the fourth annual Quarter Century Club dinner held recently at Niagara Falls. Each employee who this year attains 25 years service with the company was presented with a certificate of membership and a $100 U.S. Savings Bond.

Corporation Vice President W. H. Clifford, of the home office at Neenah, spoke to the 160 club members and guests, advising them to establish themselves as important units of government as they had established themselves as important units of Kimberly-Clark.

A NEW WOOD PREPARATION PLANT is in operation at the Longview, Wash., plant of Longview Fibre Co. The $250,000 plant is designed for economical utilization of eight-foot farm wood. The additional wood preparation capacity provided by the new installation will be needed for new paper machines now under construction.

A TRAINING FILM entitled "Safe Service," which humorously and dramatically demonstrates the proper method food handlers should use in utilizing paper cups and containers, has been produced by the Paper Cup and Container Institute, New York. The fifteen minute 16mm. film may be obtained for a free preview from Institute of Visual Training, 40 East 49 St., New York; purchase price is $25.

SEALED BIDS FOR THE PURCHASE of about 6300 cords of pulpwood timber on the Came Rucker reservation near Dothan, Ala., are being received by the U. S. Government. Prospective buyers, whose bids will be opened September 21, are inspecting the timber.

AN EXPANSION PROGRAM BEGUN early last year by Pacific Coast Paper Mills, Bellingham, Wash., (C.f. P.I. and P.W., Dec., 1949) has been completed. The expansion, which cost between $750,000 and $800,000, will increase company employment from 150 to 190 immediately.

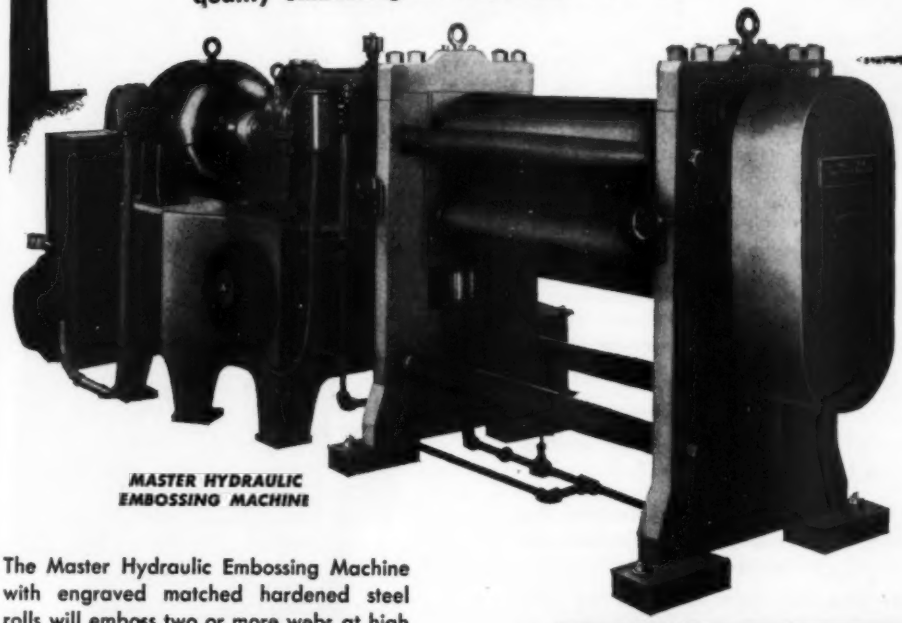
A GROUP OF FEDERAL FORESTERS recently visited Nekoosa-Edwards Paper Co., Port Edwards, Wis., to inspect the company's Nepco Lake forestry nurseries and several tree plantations. From Port Edwards, the first stop on a six week's tour of Lake States forestry operations, the foresters continued their inspection trip into Northern Wisconsin, Minnesota and the Upper Peninsula of Michigan.

"The Greatest Development in the History of Embossing"

MASTER *Hydraulic* EMBOSSING MACHINE

WITH ENGRAVED *Matched Hardened* STEEL ROLLS

The new high-speed method of embossing that will emboss up to 1,000 feet per minute producing day after day, year after year, uniform high quality embossing not duplicated by any other method or machine.



MASTER HYDRAULIC EMBOSSING MACHINE

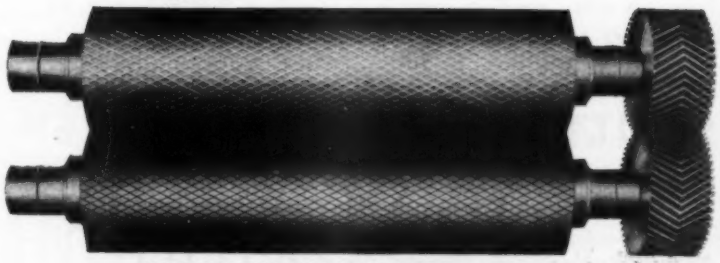
HIGH SPEED

UNIFORM EMBOSSING

FINER QUALITY

LOWER COST

The Master Hydraulic Embossing Machine with engraved matched hardened steel rolls will emboss two or more webs at high speed and produce a uniform pattern not heretofore possible, reduces scrap and eliminates lost production due to fractures in paper filled backup rolls caused by splices and material variation; will likewise eliminate costly backup roll repairs and replacement.



ENGRAVED MATCHED HARDENED STEEL ROLLS

Get the Facts NOW!

MODERN ENGRAVING & MACHINE CO.

1413 CHESTNUT AVE., HILLSIDE 5, NEW JERSEY

Substitutions ARE ALWAYS TROUBLESOME

President: Corbin, we have been experimenting with some different sources for our supplies of pulp recently. Have you noticed any differences in how they work up in the beater or on the machine?

Superintendent: It's my business to notice everything that comes into this mill and to see that everything that goes out is O. K.

President: The substitution of one type of pulp for another hasn't caused any trouble?

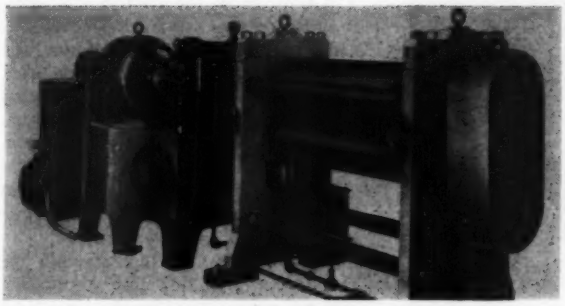
Superintendent: Substitutions are always troublesome. But we can lick the troubles that come from any substitution with one exception—HAMILTON FELTS. I'm through experimenting with felts—have tried them all. For every press on every machine there is a Hamilton Felt that does its work better, faster, and at lower cost.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

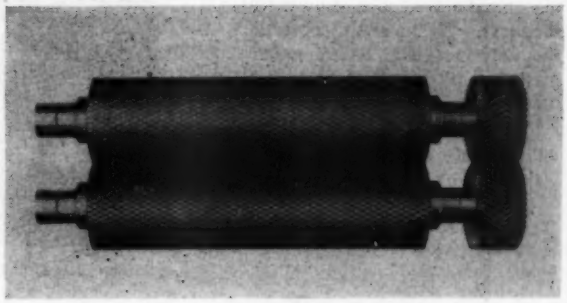
Miami Woolen Mills

Hamilton Felts

Established 1858



Master Hydraulic Embossing Machine



Engraved matched hardened steel embossing rolls

High Speed Hydraulic Embossing Machine

A modern high-speed method of embossing developed by Modern Engraving & Machine Co., Hillside, N.Y. was made possible with its new Master Hydraulic Embossing Machine and engraved matched hardened steel rolls. By a special process of precision engraving and electronic controlled flame hardening, the engraved matched hardened steel rolls are so perfectly mated that any paper or paperboard ranging from 10 pound tissue to .125 paperboard can be embossed with almost any pattern without fracture or distortion. It has been reported by F. A. Sunderhauf, president of Modern Engraving & Machine Co., that as many as fifteen sheets of 10 pound tissue have been embossed in a single operation with a 5-/50 pattern without variation in the pattern in any of the sheets, and as many as four sheets of 80 pound paper have been embossed with comparable results. In addition, Mr. Sunderhauf stated any paper can be embossed up to 1000 fpm. At the present time, two or more webs are being successfully embossed at that speed, resulting in production of 2000 fpm, a production never before equalled in paper processing.

Engraved matched hardened steel embossing rolls require no makeready, or running in, reduce scrap and eliminate lost production due to fractures in paper back-up rolls caused by splices and material variation; costly back-up roll repairs and replacement will likewise be eliminated. With the old method of embossing, the diameter of the paper-filled back-up roll is either plus or minus the diameter of the engraved steel roll, and except for an infinitesimal moment the two are never a perfect match.

Even if it were possible to match a steel roll with a paper back-up roll, the paper while being embossed would be subjected to 100 per cent contact or pressure which in many cases fractures the fiber. Engraved matched hardened steel embossing rolls have a predetermined clearance engraved in the rolls to permit the paper to flow through both rolls without damaging the fiber or reducing the Mullen test of the paper.

Minneapolis-Honeywell Organizes New Field Staff for Valve Div.

An independent field sales organization has been set up by Minneapolis-Honeywell Regulator Co., Philadelphia, for its Valve Division. The nucleus of the organization will be regional sales managers and a staff of about 20 men recently trained at the company's Valve School in Philadelphia. Providing national coverage, the main work of the new group will be to promote use of diaphragm control valves to users, instrument and original equipment manufacturers.

The following men are serving as regional managers of the new organization: R. Schlegel, Eastern region, with headquarters at New York; T. L. Smith, Mid-Atlantic region, from Philadelphia headquarters; George W. Brown, Central region, from Cleveland; R. R. Scott, Mid-West and Northwest region, with offices in Chicago; L. Crowe, Southeast region, will work out of Atlanta; C. F. Woods, Southwest region, from Houston headquarters; and W. A. Clements, who will manage the Mountain, North Coast and Pacific regions from Los Angeles.

IN THE TEN YEAR PERIOD since the development of the Hydrapulper an average of slightly over 73 units have been sold yearly. To date, 732 Hydrapulpers, manufactured by Shartle Brothers Machine Co., Middletown, Ohio, a division of Black-Clawson Co., have been sold. Over 90 per cent of the machines placed in industry are in daily operation.

PURCHASE OF A LARGE P & H crawler-type crane manufactured by Harnischfeger Corp. has increased the stock of yard equipment at Escanaba Paper Co., Escanaba, Mich. The crane will be used to handle pulpwood and other heavy materials in the yard.

Westinghouse Employee Education Program Has New Quarters

The new Westinghouse Educational Center—a non-profit corporation formed by Westinghouse Electric Corp., Philadelphia—was recently opened at Wilkinsburg, Pa. The Center was planned and constructed to offer Westinghouse employees and their families educational and cultural development.

Six classrooms and a large lecture room where the Westinghouse evening graduate study program is conducted in co-operation with the University of Pittsburgh take up a good part of the Center's 35,000 square feet of floor space. Additionally, a reading room, a lobby-lounge, a snack bar, auditorium, hobby rooms, and numerous offices have been provided.

Courses at the Center will include virtually every phase of engineering, from basic work through postgraduate work. About 350 employees will participate in the program this year.

Iron Works Plant Bought by Canadian Allis-Chalmers

Purchase of the plant of Erie Iron Works at St. Thomas, Ontario, Canada, has been announced by Allis-Chalmers Rumley Ltd., a Canadian subsidiary of Allis-Chalmers Manufacturing Co., Milwaukee. An additional seven acres of land were also purchased from the city of St. Thomas, and an option has been taken on still another 24 acre plot.

Occupation of the site was taken October 2; the company plans to have installation of machine tools for manufactur-

ing operations completed by the first of the year. Temporarily, operations at the two year old, 19,000 square foot plant will be carried on on an assembly basis.

To be used by the general machinery division of Allis-Chalmers, the new plant will for the present manufacture and assemble parts of such equipment as controls for diesel locomotives manufactured by General Motors Diesel plant, London, Ontario.

H. K. Porter Sells Locomotive Business—Acquires Steel Firm

Two transactions concerning manufacturing operations were completed by H. K. Porter Co., Inc., Pittsburgh, this month. The company's locomotive business was sold to Davenport-Besler Corp., Davenport, Iowa. The sale included patterns, drawings and spare parts business; the Davenport-Besler firm will henceforth service all Porter locomotives now in operation and will build duplicate ones.

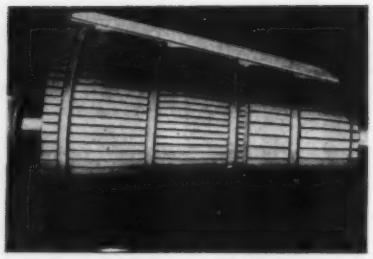
The Porter company recently acquired Connors Steel Co., Inc., Birmingham, Ala., manufacturer of electric furnace steel and steel products. The new property produces steel billets from scrap by the electric furnace method and operates a series of rolling mills to manufacture finished products, for a total capacity exceeding 94,000 tons yearly.

Ross Industries Corp. Lets Contract for Expansion

A contract for a plant expansion at Highland Park, N. J., has been awarded The H. K. Ferguson Co. by Ross Industries Corp., parent company of J. O. Ross Engineering Corp. The project will provide an added 75,000 square feet of floor space, part of which will be used for laboratories and offices. A small wartime building will be retained in the new structure.

The new building will be 428 x 181 feet and will have a steel frame and brick exterior walls with a monitor-type roof. Expected to cost about $900,000, the project will be completed in 1951.

PURCHASE OF THE CHROMIC ACID business of E. I. Du Pont de Nemours and Co., Wilmington, Del., has been announced by The Diamond Alkali Co., Cleveland, Ohio. The acid will continue to be manufactured by Du Pont at its Philadelphia plant; under terms of the sale, Diamond will assume product distribution on January 1. The purchase price was not revealed.



Jordan plug of BlaCaloy iron

Twisted C-Clamp demonstrates the ductility of BlaCaloy iron

Body of the Hydrapulper rotor is a BlaCaloy casting

Black-Clawson and Affiliates Licensed to Produce Ductile Iron Castings

After extensive investigation and experiment, the foundries of the Black-Clawson Co. and subsidiaries are now producing magnesium treated gray iron castings under license of International Nickel Co., Inc. At the present time, this new type of cast iron is being manufactured in five basic grades so that the widest possible advantage may be obtained from the factors of high strength and ductility. The different grades of ductile iron may be used either in the as-cast condition or with suitable heat treatments to provide specific properties. This iron is designated as BlaCaloy, followed by a grade number; E. G. BlaCaloy No. 44.

Due to the reaction of magnesium upon the carbon constituent of gray iron, the particles of free graphite are converted from flake or stratified form to nodules or spheroids. This change of graphitic form overcomes the structural discontinuity and internal notching effects of graphite stratification.

In contrast to the relative brittleness of ordinary gray iron, one of the outstanding characteristics of BlaCaloy iron is its ductilitiy or toughness. This property can be demonstrated by twisting machined strips of the metal. As-cast specimens can be twisted in long convolutions without breaking, while fully heat treated specimens can be made so flexible that they can be twisted into spirals resembling twist drills.

The combination of high strength and ductility of BlaCaloy iron approaches that of cast steel. In fact, BlaCaloy iron combines the product weldability with the process advantages of cast iron such as castability, machinability, corrosion resistance, and economy.

The Black-Clawson engineers and metallurgists are specifying BlaCaloy iron for conventional gray iron in castings where the increased strength and toughness can be used to provide a greater factor of safety or a reduction in the over-all weight of an item. They are specifying BlaCaloy iron also for cast steel and malleable iron where the properties of the new material are adequate or superior, at a substantial reduction of cost.

Pabco Products Is New Name for Paraffine Companies

After approximately 50 years use of the trade name PABCO to identify its products, The Paraffine Companies, Inc., San Francisco, announces that effective November 1, the company name has been changed to Pabco Products Inc.

The change of name has been made to enable customers to readily identify the name of the company with its many products and activities. There will be no change in the management or policies of the company.

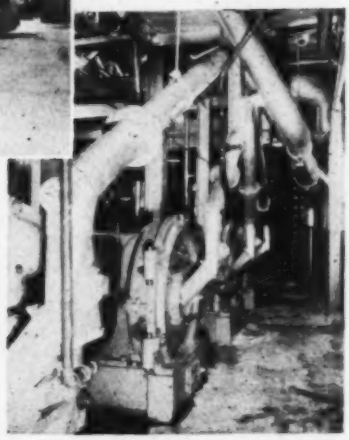
A SALES AND TECHNICAL SERVICE office has been opened at 825 Morehead St., Charlotte, N.C., by Morningstar, Nicol, Inc., New York. The new telephone is Carolina 6-3977. Paper mill starches will still be manufactured at Houlton, Maine, and Twin Falls, Idaho. The three plants of the firm's subsidiary, Paisley Products, Inc., are in New York, Minneapolis and Chicago.

ARRANGEMENTS FOR PURCHASE of Harmon Color Works, Inc., Kearny, N.J., from its parent company, American Home Products Corp., have been completed by The B. F. Goodrich Chemical Co., Cleveland, a division of B. F. Goodrich Co. The Harmon firm will continue to operate at its present locations under its present management as a subsidiary of the Goodrich company.

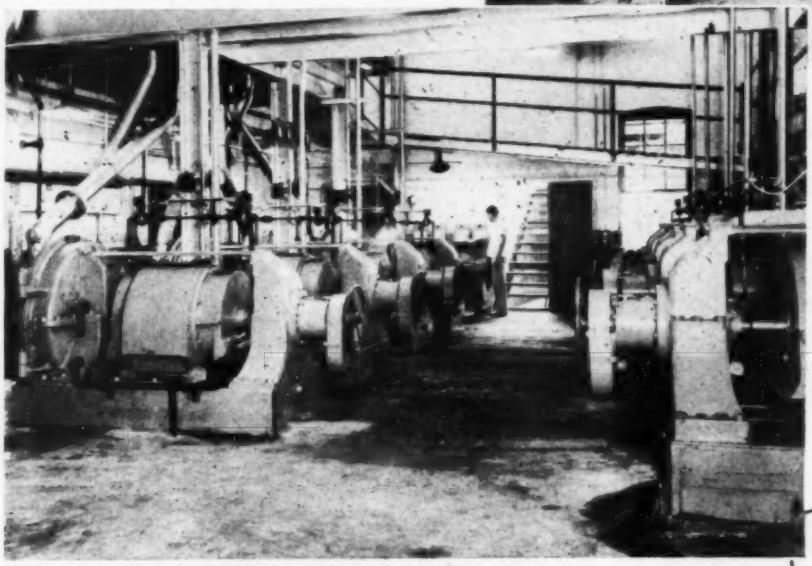
Mills that compare Refiners

Front view of primary stage 400 H. P. refiners. First two units operating on shredded knots and screenings . . . note discharge spout from shredders.

Last three units operating on semi-chemical chips . . . note flexible dilution water lines and electric cable—swing head door side.



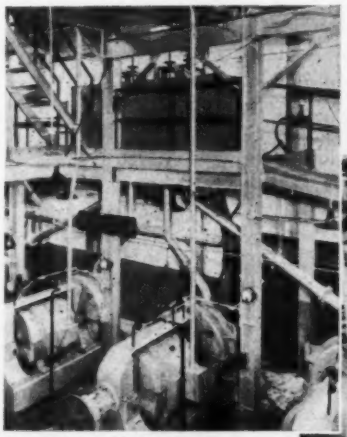
Front view—secondary stage refiners, showing stock inlet piping arrangement...note dilution water line at refiner intake.



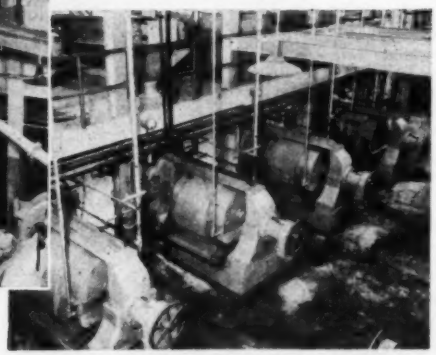
Four 300 H. P. secondary refiners (on left) . . . note stock inlet piping—lubrication oil-flow indicators, and compact arrangement of instrument panel.

The GAYLORD Installation
A battery of 9 Sprout-Waldron Refiners at the Bogalusa, La. plant of Gaylord Container Corp.

choose Sprout-Waldron



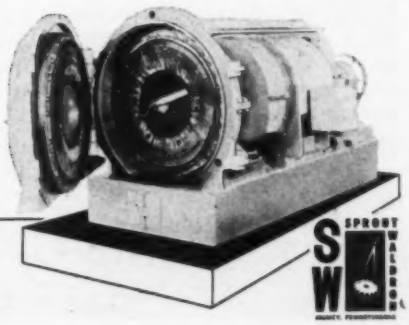
Individual view of secondary stage refiner illustrating stock handling system from regulating box to refiner . . . note ammeter, dial indicator and oil flow indicators.



Top view—primary stage refiners. Two units in foreground on semi-chem chips . . . note dewatering unit directly overhead.

Two units at extreme end operating on knots and screenings . . . note Jeffery shredders located directly above. Note dial indicators—tail end.

Sprout-Waldron Refiners, or "Sprouts" as they are dubbed in the industry, are sprouting up in mills all over North America. Let one of our field representatives tell you the facts about the fast-growing popularity of this equipment. Or, write today for Bulletin 41 to Sprout, Waldron & Co., Inc., 2 Waldron St., Muncy, Penna.



Sprout-Waldron
Manufacturing Engineers
SINCE 1866
MUNCY • PENNSYLVANIA

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View of the head or feed end of three ROTEX Chip Screeners No. 72 in the Bogalusa, Louisiana, plant of the Gaylord Container Corporation. Note the rugged construction of these machines as well as the relatively small amount of head room required.

ROTEX*
CHIP SCREENER NO. 72

The accompanying illustrations show a battery of three ROTEX Chip Screeners No. 72 in the new wood room at the plant of the Gaylord Container Corporation at Bogalusa, Louisiana.

The ROTEX No. 72 has two screen surfaces, an upper screen surface, 80 by 189 inches, equipped with coarse mesh to pass all usable chips and to reject slivers and oversize chips, and a lower screen surface, 80 by 180 inches, equipped with a fine mesh screen to take sawdust and dirt out of the prepared chips.

Each of these machines will handle a capacity of 30 cords of chipped wood per hour and produce a uniform grade of clean prepared chips. The No. 72 ROTEX incorporates the same efficient screening action that has been used for years in the smaller ROTEX Chip Screeners. In other words, the No. 72 model is a larger ROTEX, designed to have a capacity in keeping with the larger chippers and wood room equipment.

ROTEX Chip Screeners have been used in the Bogalusa plant for over fifteen years, so that this new installation is a testimonial to the satisfactory service that the machines have given.

There are six different sizes of ROTEX Chip Screeners with capacities ranging from 5 to 30 cords of chipped wood per hour, consequently we can offer an economical size for any wood room.

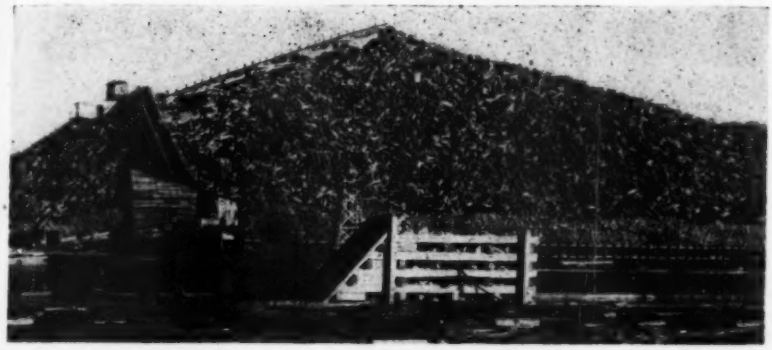
Allow us to give you detailed information on Screens for your wood room.

A general view of the three ROTEX Chip Screeners No. 72 in the wood room of the Gaylord Container Corporation plant. These three machines make a very compact and convenient installation that will handle a very large volume of chipped wood.

*T. M. REG.

THE ORVILLE SIMPSON COMPANY
1230 KNOWLTON ST., CINCINNATI 23, OHIO

The Paper Industry Pictured Highlights



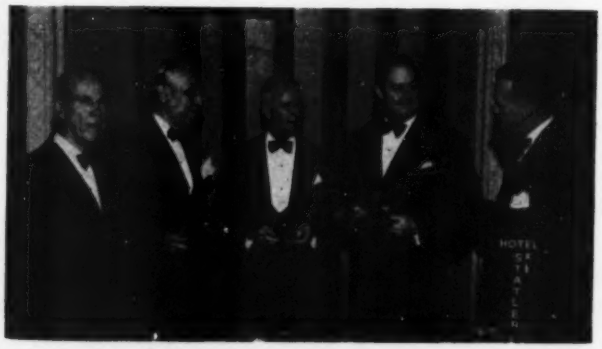
PULPWOOD MOUNTAIN at Brown Co., Berlin, N. H., contains about 35,000 cords. In a new reforestation plan, the company offers suppliers eight small trees for every cord of pulpwood purchased.

"MAN OF THE SOUTH" for 1950 is Reuben B. Robertson, board chairman, Champion Paper and Fibre Co. A poll, conducted annually by *Dixie Business* magazine, selects 50 of the South's foremost business leaders; one is awarded top honors.

A SILVER MEDALLION is presented to E. E. Grant (R), pres. Crystal Tissue Co., by Chas. Hook, board chairman, Armco Steel Corp., for services as pres. of Middletown Civic Ass'n for 1948, 1949 and 1950.

ON FOUNDER'S DAY, John M. Kelley, V.P. Rust Engineering Co. (specialists in paper mill engineering), presents 10-year golden service pin to Mrs. Betty Noel. Five women and 121 men received long-time service awards at the dinner.

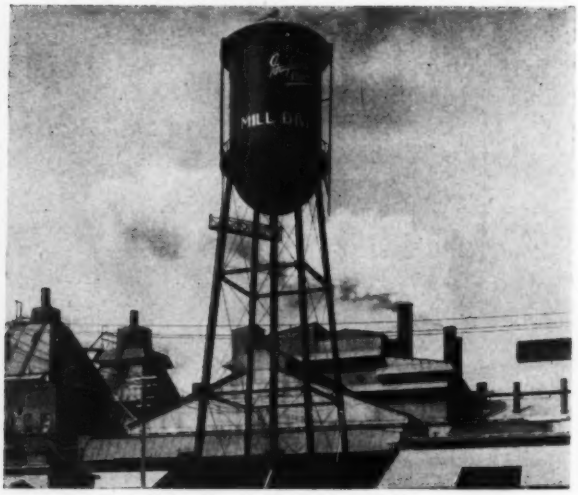
CARTONS NICELY STACKED . . . . But how to get the top one is puzzling lovely Conover model, Phyllis Hunt. The stack is 24 ft. high. Cartons are a self-palletizing development of Shelton Mfg. Co., Long Island City.



GOLD AND SILVER OSCARS for the best report of all industry and the best in its classification (resp.) were awarded Champion Paper and Fibre Co. in tenth annual survey conducted by the *Financial World* magazine. RIGHT to Left: Weston Smith, exec. V.P. *Financial World;* R. B. Robertson, Jr., Champion Paper; Frank Abrams, Standard Oil Co., N. J.; Alfred P. Sloan, Jr., General Motors Corp., and Dr. Haney, New York Univ., who headed board of judges.

Gaylord completes postwar expansion

RICHARD W. PORTER
Editorial Director, The Paper Industry



▶▶▶ THE SUMMER OF 1950 saw Gaylord Container Corp., Bogalusa, La., complete the major part of its $7,000,000 postwar expansion program. The capacity of practically all parts of the mill has been enlarged, either by adding new equipment or by rebuilding and modernizing the old.

A look at the record shows that this mill, founded in 1917 as the Bogalusa Paper Co., an offshoot of the Great Southern Lumber Co., has never ceased to grow. Built originally to produce about 100 tons per day of cylinder liner board, this mill has multiplied its production capacity to where it now turns out over 850 tons of kraft and semichemical paper and paperboard per day.

Most recent jobs completed in the postwar expansion program described herein include a new wood handling system, digesters, brownstock washers, evaporators, recovery furnace and precipitator, high-density stock storage system, semichemical pulping and refining system, the rebuilding of one of the fourdrinier paperboard machines, and the enlarging of another.

A complete new wood handling and preparation system has been added, and includes a flume-type conveyor, wood unloading crane, barking drum, chipper, screens and conveyors. It started operation in July, 1950.

Wood mill

Designed with sufficient water velocity to minimize plugging, the new flume conveyor is 500 ft. long, 3 ft. wide, 8 ft. deep at the low end and 6 ft. deep at the far end. The flume is built of concrete, rounded at the corners. The concrete trough is covered with a fitted ⅜-inch thick sheet iron lining which is bolted through the concrete. The steel lining is made up of small sections which can be readily replaced when necessary. This lining helps absorb and distribute shock loads, and should aid in preventing damage to the concrete trough.

The flume was made sufficiently deep so that adequate slope could be maintained should it ever be lengthened. By increasing its length to about 2400 ft., it would extend out into the wood storage area. At present, wood is brought from yard storage by railroad cars on two sets of tracks, one on each side of the flume. An overhead craneway about 25 ft. high and about 44 ft. wide spans the flume and railroad tracks. A P&H 7½-ton bridge crane with a one-cord capacity Blaw-Knox grapple is used to unload cars and dump the logs into the flume. This overhead craneway extends 300 ft. from the deep end of the flume. Wood also can be unloaded from the cars and thrown direct into the flume manually.

Reused water from the mill is used in the flume. Evaporator seal pit water and evaporator condensate flows by gravity through a 36-inch cast iron pipe line to the flume at the rate of approximately 12,000 gpm. Evaporator condensers are installed on a pedestal high enough so that the discharge can flow by gravity to the head of the flume.

From the flume conveyor, an inclined two-strand chain conveyor takes the wood to the barking drum. The first 20 ft. of the inclined conveyor has slotted steel bottom plates for the water to drain through. Any bark or other materials that will not go through the slots is dragged into the barker along with the wood. Water from the flume passes through a Chain Belt Co. traveling screen, and normally is sent direct to the sewer. Provision is made, however, for it to be recirculated. Two 7,000 gpm Dean Hill pumps are employed for this purpose. A 400 gpm self-priming LaBour pump supplies water for washing the barked wood and for lubricating the wood conveyors.

Heavy-duty barking drum

The new barking drum, built by Traylor Engineering and Mfg. Co., is 12 ft. in diameter by 45 ft. long. This is a one-piece welded drum fabricated from 1⅜-in. steel plate with 2-inch wide milled slots and with 12 lifters welded on the inside. In construction, the barker resembles a rotary lime kiln and is supported on two 24-inch face tires by two pair of 46-inch diam. rollers. The barker is rotated by a 150 hp. motor with a V-belt driven pinion and ring gear mounted on the drum. It was designed of extra-heavy construction to minimize maintenance. The barker operates dry, and the bark is conveyed to storage prior to its being burned in a bark-burning boiler.

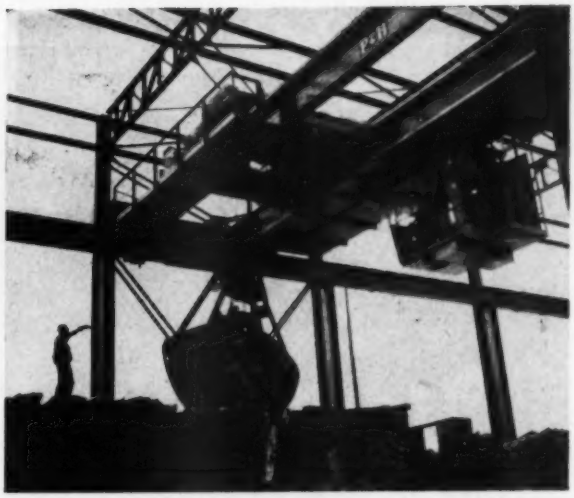
A large chute permits the clean logs discharging from the barker to slide by gravity into the chipper feed conveyor. This is a two-strand inclined chain conveyor. All wood conveyor troughs are of welded steel construction and are strongly and heavily built. The inclined conveyor discharges direct to a 96-inch diam. 12-knife Carthage chipper, which can accommodate logs up to 20 inches diam. The chipper will produce about 40 cords of chips per hr., and is driven by a 400 hp. Allis-Chalmers induction motor through a flat belt drive. Chipper knives are sharpened on a Hanchett grinder.

Chips drop from the chipper onto a flat steel-plate-conveyor, which in turn discharges to a flight conveyor which takes the chips to the screens. Individual gates in the bottom of the flight conveyor regulate the volume of chips going to each of the three Orville Simpson No. 72 Rotex screens. These are the largest screens of this type ever built, with individual screen surfaces of 80 inches wide by 15 feet long.

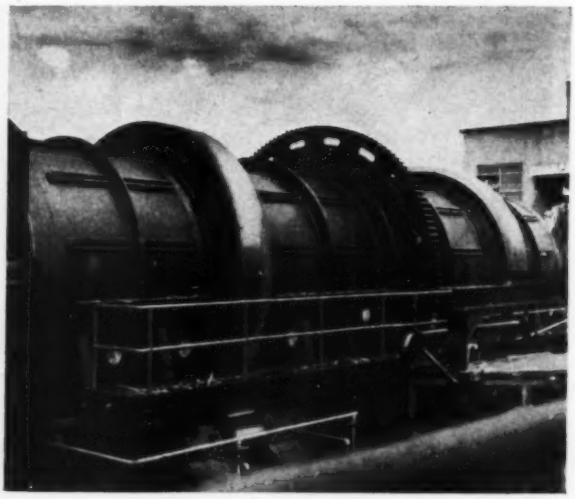
Fines and sawdust go with the bark to be used as fuel.

Wood Mill

1—Steel-lined concrete flume conveyor using mill effluent floats wood to the barker feed conveyor



2—Wood is unloaded from cars by P & H bridge crane with a Blaw-Knox one-cord capacity grapple



3—Traylor heavy-duty barker is a one-piece welded drum with milled slots and 12 lifters inside

4—Operators-view of wood handling and preparation system—foreground conveyor leads to chipper

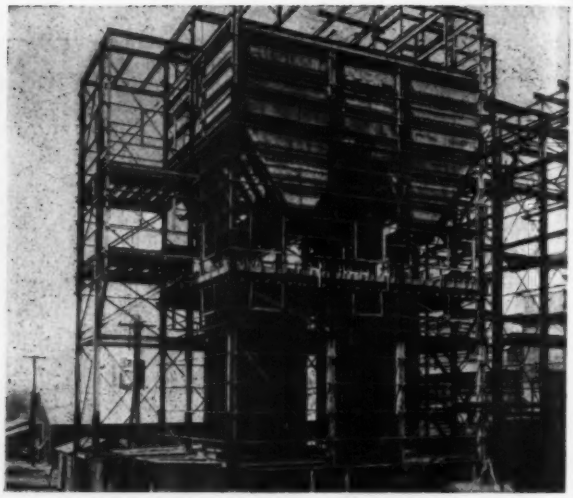
5—Carthage 12-knife chipper driven by an Allis-Chalmers motor takes wood up to 20 inches diameter

6—Operators-view of Link-Belt chip conveyor and Orville Simpson Rotex screens; one operator controls complete new wood system

GAYLORD EXPANSION . . . . .

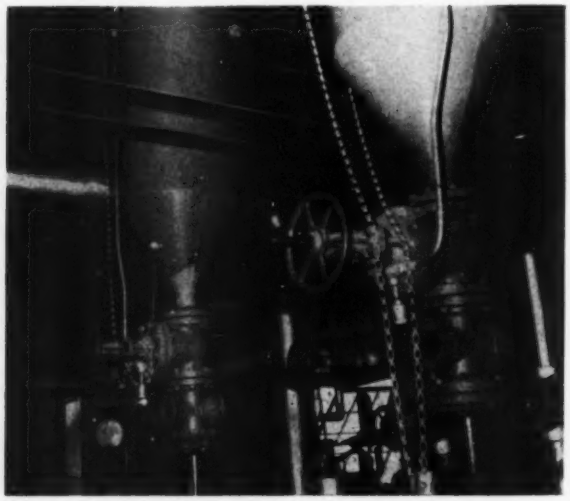
Digesters

1—Digester building contains four new 2600 cf Chicago Bridge and Iron Co. carbon steel digesters

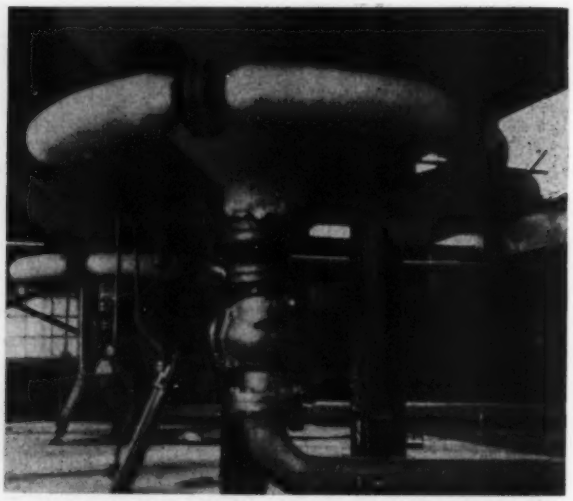


2—Here's how new digesters looked during construction—overhead hoppers hold two batches for each digester

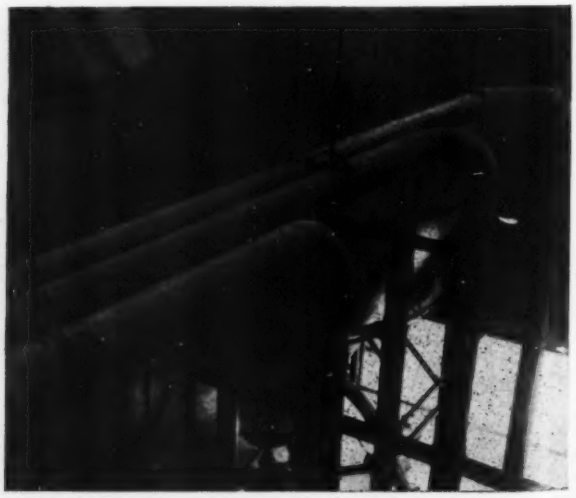
3—Digesters are automatically controlled with Foxboro time-cycle steam pressure controllers



4—Liquor carryover in gas-off operations is removed in SS cyclone separators with a sight-glass section



5—Digester bottom with steam feed ring and Yarway hydraulic operated blow valve



6—New blow tank receives cooked pulp from digester blow; old tank was moved alongside of new one

Oversize chips are reduced in a hammermill and rescreened. Accepted chips from the screen are conveyed through the basement to the bucket elevator, which in turn discharges to a belt conveyor and self-propelled tripper, which fills the hoppers over the new digester. Individual hoppers over the digesters hold enough chips for two cooks. All wood and chip conveyors in the system were supplied by the Link-Belt Co.

Control of the wood preparation system is in the hands of one man seated at a control station above the chipper. He can see the operation of the wood unloading crane, flume conveyor, drum barker, conveyors, chipper and screens. He, therefore, controls all operations from the inclined conveyor taking wood from the flume, on through the conveyor which takes the chips from the screens to the elevator. The old wood system is operated in the same manner, but consists of two barking drums, two chippers, screens, conveyors, but does not have a flume conveyor.

The new system is laid out so that it can be doubled in size by addition of another barker, chipper, and additional screens. At the present time, pine wood is handled in the new system, while half of the old system is now employed on pine and the other half on hard woods (oak, gum) for use in semichemical pulping.

Consulting engineer for the wood preparation system was Paul Birk, Chicago.

Digesters

The old digester installation was made up of twenty-four 1300-cf stationary digesters (and four globe rotary digesters, now discontinued). The new digester room contains four new 2600-cf digesters built by the Chicago Bridge and Iron Co. These started operation in May, 1950. The new digester installation is designed so that further expansion can be effected readily.

Constructed of carbon steel, each digester has a ⅛-inch thick stainless steel wear plate on the bottom cone. They are direct-steamed, with steam entering at six points around the bottom cone. Cooking operations are controlled by Foxboro time-cycle steam pressure control. Gas-off is handled manually. The gas goes through a sight glass section and into a stainless steel separator, from which liquor carry-over is returned to the black liquor dilution tank. From the gas-off cyclone, the turpentine vapor goes to a turpentine separator via a condenser where it is decanted off. Digesters are blown through remote controlled Yarway hydraulic operated blow valves.

On the digester operating floor is one liquor-measuring tank, and above it are two storage tanks, one for white liquor and the other for black liquor.

A new blow tank has been installed in a new building adjacent to the digester building. The blow tank is equipped with a torque measuring bottom-entering agitator, which controls dilution of the blow tank stock with black liquor. The old blow tank was moved into the new building adjacent to the new blow tank.

Brown stock washers

From the blow tanks, the stock is pumped direct to the Swenson-Nyman washers. Each line of washers comprises two 2-stage rotary vacuum washers, each of which provides four stages of counter-current washing. The first two lines of washers have 9 x 12-ft. drums, but the third line of washers, installed in the spring of 1950, have 9 x 14-ft. drums.

Actually, this mill had the first Swenson-Nyman brownstock washers in the South and operated the original two Swenson-Nyman washers separately, each with two stages. In 1947, when two more washers were installed, they were converted to two rows of two washers each, with a total of four stages per line. Washer operation is controlled by Foxboro instruments. Each of the three lines of washers has its own Nash vacuum pump to provide the necessary vacuum.

Total production of kraft pulp per day is about 750 tons. About 600 tons is washed on the three lines of brownstock washers, while the other 150 tons is washed in two batteries of diffusers. There are 32 diffusers in batteries of fourteen, twelve and eigh units each. The battery of eight diffusers is used for semichemical pulp.

Evaporators

Three more Swenson evaporator bodies were added to the existing evaporators, making a total of 17 long-tube vertical type units. These evaporators are equipped with LaBour pumps. Four of the old bodies were rebuilt. The bodies were lengthened and the tube lengths were increased from 16 ft. to 26 ft. These are now arranged in two lines of six-effect and one line of five-effect evaporators.

Recovery system

An additional recovery furnace was started up in March, 1950. This is a new Combustion Engineering unit, designed for 240 tons of pulp per day. It operates at 450 psi and produces around 100,000 lb. of steam per hour. Flue gases, after passing through the Murray cascade evaporator, go through a Research Corp. upward-flow Cottrell precipitator, made up of two tile shell units with individual electrical systems. Dust from the precipitator hoppers is conveyed dry with a screw conveyor to a tank where it is mixed with black liquor before going to the cascade evaporators. Salt cake make-up is mixed with the black liquor after it is concentrated and before it enters the smelter.

Liquor making

Three Dorr causticizing tanks were added to the liquor making system in 1949. A new Traylor kiln for lime recovery was installed in 1947 as an addition to the three existing kilns. It is 350 ft. long by 7 ft. inside diam. It is fired with natural gas with combustion air and induced draft furnished by Buffalo blowers. Included in the installation was a complete system to handle lime rock and shells for make-up, together with a hot lime handling and slaking system.

Wet room

Two new Impco rotary knot screens and two Bird centrifugal screens were installed in July, 1950. These are the only additions to the screen room, with the exception of a high-density thickener.

High-density stock storage

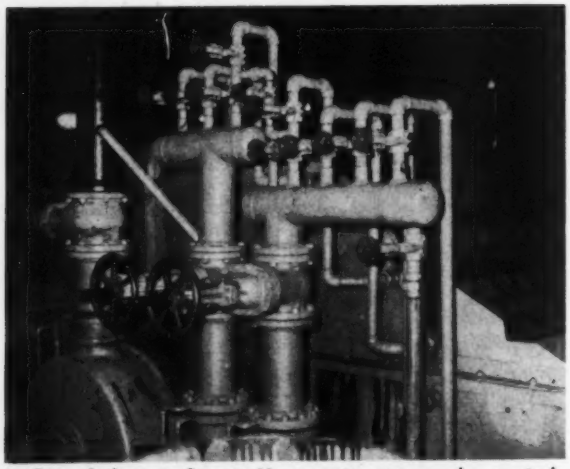
In order to increase the storage of stock for the paper machines in a minimum of space, it was necessary to go to high-density storage. A new 8 x 16 ft. Impco thickener discharges washed, screened stock in the form of crumbs at 18 to 20 per cent consistency into a lateral screw conveyor, which discharges in turn into an inclined belt conveyor. It is carried on this inclined conveyor belt to the top of four 40 x 40 ft. steel storage tanks, where it discharges to a horizontal shuttle-type conveyor, which drops the pulp to any of the four storage tanks. Each of the storage tanks contains about 200 tons of pulp, making a total storage capacity of about 800 tons in all. Storage tanks were built by Chicago Bridge and Iron Co., Pulp conveyors by Link-Belt Co., and conveyor belts by U. S. Rubber Co.

Stock from high-density storage is reclaimed by first diluting and then pumping the slush pulp back to the wet room. A single jet pipe enters the side of each tank about 6 feet above the reclaim pump suction located at the low side of the slightly sloping tank bottom. Water is pumped from the wet room pit into each tank through a 3-inch nozzle at about 1000 gpm and 100 psi.

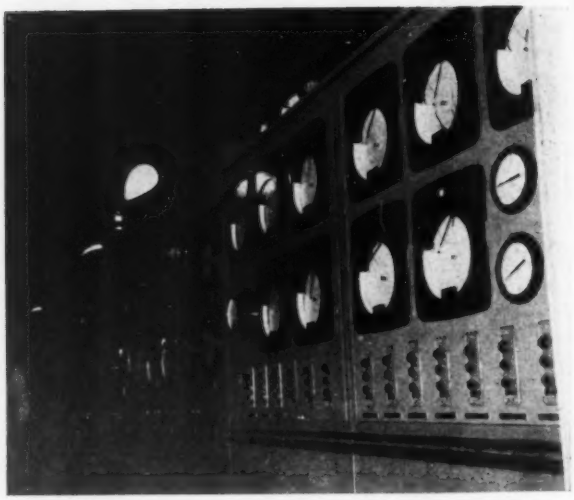
Slushed stock is pumped from the storage tank to the wet room, where it is blended with washed, screened pulp ahead of the deckers. Stock from high-density storage may be used

GAYLORD EXPANSION . . . . .

Chemical recovery

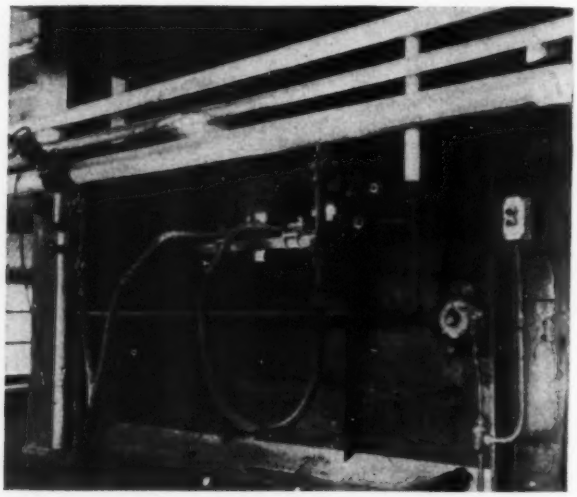


1—One of the new Swenson-Nyman rotary vacuum brown stock washers. Each drum washes in two stages

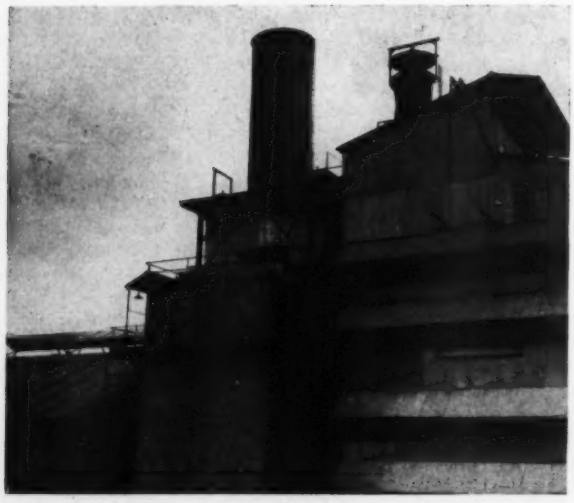


2—Control panel for newest line of brown stock washers. Foxboro instruments are used

3—Black liquor from the multi-effect evaporators is further concentrated in a Murray cascade evaporator



4—C.E. recovery furnace burns liquor from 240 tons of pulp per day, producing about 100,000 lb. of steam per hour



5—Chemical dust in the recovery furnace flue gas is recovered in a Research Corp. Cottrell precipitator

6—Traylor lime recovery kiln fired with natural gas burns lime with make-up lime rock or shells

Facts About Gaylord Container Corp.

What are the Products?

Pulp and paper products include kraft and kraft semichemical pulp; fourdrinier and cylinder liner board, chipboard, semichemical corrugating board; bleached and unbleached bag, wrapping, and butcher and laminating papers; as well as a variety of paper specialties. Mill by-products include turpentine and Tall oil.

Converted products include a complete line of kraft bags and sacks—grocery bags, garment bags, notion and millinery bags, shopping bags, bakery goods bags, etc. Bags are made in a wide variety of weights and styles—white, colored, plain or printed. Kraft wrapping papers from heavy industrial wrapping to bleached specialty wrappings are an important part of Gaylord's packaging line. Its boxes and cartons include corrugated boxes, solid fiber boxes, beverage carriers, folding cartons, as well as display stands and other packaging materials.

Where are the Plants?

Home office of the company is at 111 No. Fourth St., St. Louis, Mo. The states of Louisiana and Mississippi contain the company owned or leased pulpwood forests. Bogalusa, La., is the home of the pulp, paper and paperboard mill that supplies much of the paper and board used by the company's fourteen converting plants located at Bogalusa, St. Louis, Milwaukee, Atlanta, Greenville, N. C., Tampa, Jersey City, Dallas, Houston, Weslaco, Texas, and Oakland. Forty-three sales offices throughout the country serve customers who depend on Gaylord for dependable packaging.

Who are the owners?

Gaylord Container Corp. was founded in 1937 by the merger of the Bogalusa Paper Co., paper and board manufacturer, with Robert Gaylord, Inc., paper and board converter. The company is owned by over 6,300 stockholders. Stock is listed on the New York Stock Exchange. Transfer agent is The Marine Midland Trust Co. of New York. Registrar is the Chemical Bank and Trust Co., N. Y.

Who runs the business?

Officers: A. Conger Goodyear, chairman of the board of directors; Clifford W. Gaylord, president; Charles W. Goodyear, first vice president; Vertrees Young, executive vice president; Joseph M. Arndt, vice president, directing sales; Edwin J. Spiegel, vice president and treasurer; William L. Meyer, secretary, assistant treasurer and controller; Herbert F. Kalbfleisch, assistant secretary.

Directors: Joseph M. Arndt, Robert A. Digel, Clifford W. Gaylord, A. Conger Goodyear, Charles W. Goodyear, Seymour H. Knox, I. A. Magnitsky, Conway H. Olmsted, Robert H. Redfield, Edmund P. Rogers, Edwin J. Spiegel, Vertrees Young.

Who runs the Bogalusa mill?

Vertrees Young, executive vice president and resident manager; Alfred Suter, general superintendent; A. D. Levert, assistant general superintendent; W. F. Gillespie, technical director; W. S. Richardson, assistant technical director; J. J. Goss, assistant technical director; N. H. Seirsdale, works manager and office manager; J. M. Murray, pulp and paper mill superintendent;

Executives of Gaylord's Mill Division

Vertrees Young
Executive Vice President
and Resident Manager

Alfred Suter
Gen. Supt.

W. F. Gillespie
Tech. Director

B. B. Pierce
Chief Engineer

J. M. Murray
Pulp & Paper
Mill Supt.

A. D. Levert
Asst. Gen.
Supt.

F. E. Augustine
Board Mill
Supt.

D. M. Wadsworth, assistant pulp and paper mill superintendent; Fred E. Augustine, board mill superintendent; Edmund Bache, assistant board mill superintendent; B. B. Pierce, chief engineer; E. L. Cowan, assistant chief engineer; R. J. Cruthirds, power plant superintendent; Vincent Knight, superintendent of maintenance; J. A. Box, master mechanic; P. M. Garrison, woodlands manager and chief forester; Emery Smith, yard superintendent; J. P. Thompson, division traffic manager; A. G. Curtis, pulpwood procurement superintendent; H. J. Foil, purchasing agent; J. J. White, assistant purchasing agent; E. J. Whelan, supervisor in charge of by-products; C. H. Allen, superintendent of land department; E. A. Holcombe, division accountant.

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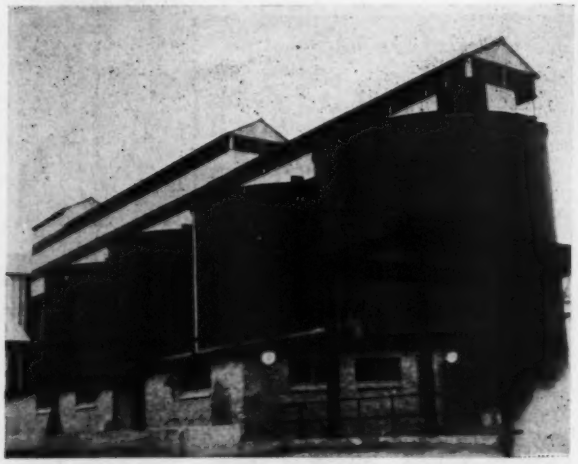
on all machines except No. 7, the new Beloit machine installed in 1942. Two Goulds 1000 gpm, 240-ft. head pumps driven by 150 hp. G-E motors supply water to the sluicing nozzles. Only one of these is in use at a time. Both of them deliver water to a common manifold, which feeds all nozzles. Each tank is equipped with an individual reclaiming pump, which delivers slush stock through a common pipe line leading back to the wet room. These four Goulds 2100 gpm stock pumps are each driven by 100 hp. G-E motors.

White water system

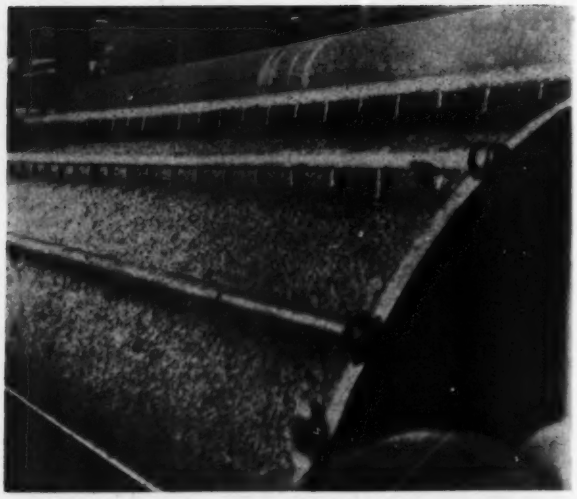
Underneath the high-density stock storage tanks is a half-million-gallon wet room pit or white water storage chest. This water is collected from the thickeners and deckers in the wet room. It is used for reclaiming the high-density stock from storage and, after passing through two Chain Belt traveling screens, it is also used on the brownstock washer showers, diffusers, and in the evaporator condensers. The screens remove much of the fibrous and other foreign material that might plug washer showers. A further precaution is taken by passing the shower water through three Malone rotary water screens located in the washer room.

The pump room adjacent to the high-density stock storage tanks contains eleven pumps. These include the two sluicing pumps which deliver water to the jet nozzles in the storage tanks. Six Dayton-Dowd, 6000 gpm, 150-ft. head pumps de-

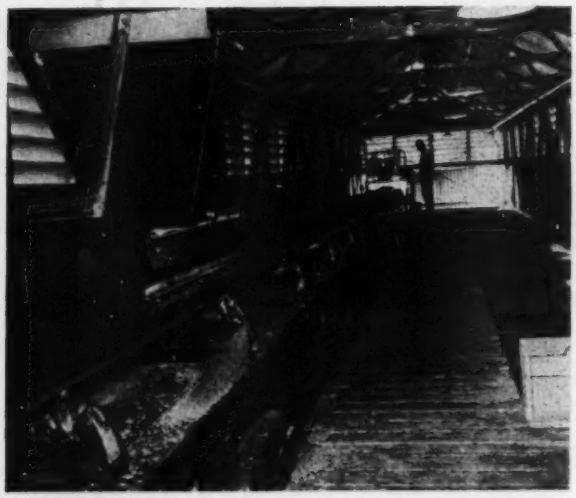
High density pulp storage



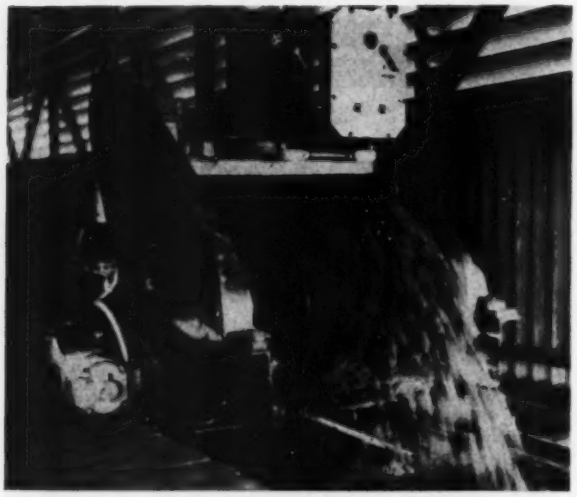
1—High density pulp storage tanks (Chicago Bridge & Iron Co.); each one holds 200 tons of 20 per cent consistency stock



2—Impco thickener (8x16 ft.) dewaters washed screened stock to 18-20 per cent consistency



5—Link-Belt shuttle conveyor with U.S. Rubber Co. conveyor belt delivers stock to each of the storage tanks



6—End of shuttle conveyor discharging high density pulp into one of the four tanks

liver water to the brownstock washers and to the wet room for washing and diluting. Three of these pumps are driven by 150-hp. motors and three by 125-hp. motors. Three Dean-Hill 6000 gpm, 162-ft. head pumps powered by 300-hp. motors pump water to the evaporator condensers, which in turn discharge by gravity to the wood flume conveyor. All pumps in this installation are powered by G-E motors.

Emergency fresh water supply for use in evaporator condensers is stored in a discontinued save-all which is 190 ft. in diam. by 12 ft. deep.

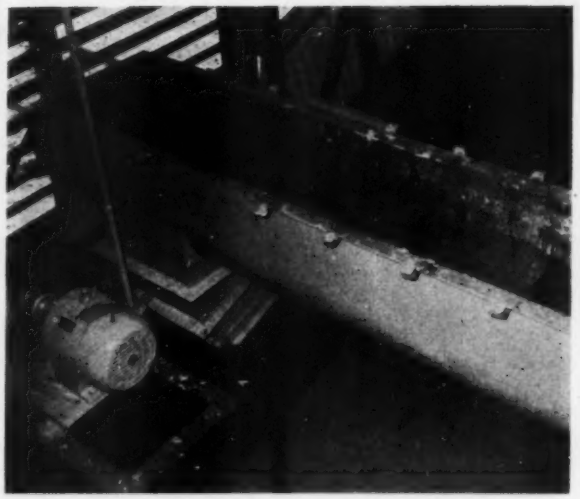
Overflow from the wet room pit is measured by a Parshall flume equipped with a recording meter. Normally, flow is about 2500 gpm and discharges to the sewer line. Parshall flumes have numerous advantages over weirs. They are self-cleaning and have the accuracy of a weir with much less drop. About 6-inch head is all that is necessary in this particular case. It is planned to eventually replace all weirs with Parshall flumes at Bogalusa.

Semichemical pulping

With the addition of four new digesters, it was possible to take out of service the four globe rotary digesters previously used to make semichemical pulp for 9 pt. corrugating board. Semichemical pulp from oak chips is now being cooked in four of the old 1300 cf vertical digesters. Digester operation is similar to that of ordinary kraft cooking, and uses the same white liquor. However, it uses less white liquor and more black liquor, and is cooked for a shorter period of time. When cooking is completed, the digesters are blown to eight diffusers. Here the black liquor is drained from the semichemical chips, which are then washed. Black liquor is pumped to the weak liquor storage tanks and is evaporated and burned along with the regular kraft liquor.

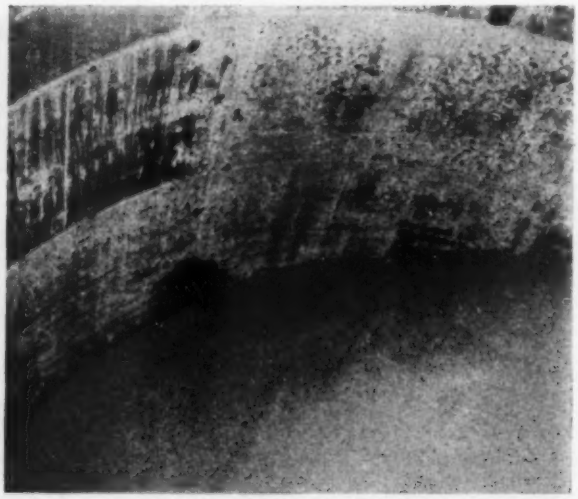
Washed semichemical chips are pumped from the diffusers at 3 to 4 per cent consistency by ordinary centrifugal stock pumps to a 20 x 20 ft. storage tank in the stock preparation room. From this tank, the chips are pumped to the head box of three drainer conveyors. These consist of ordinary drag conveyors in vats with sloping perforated false bottoms from which the water flows out by gravity. The semichemical pulp is thus dewatered to about 8 per cent consistency for primary refining.

In addition to the semichemical pulp, all of the wet room screen rejects are defibered and refined for blending with semichemical in the 9 pt. corrugating sheet. It is necessary to have some long-fibered stock in this paper, and rather than

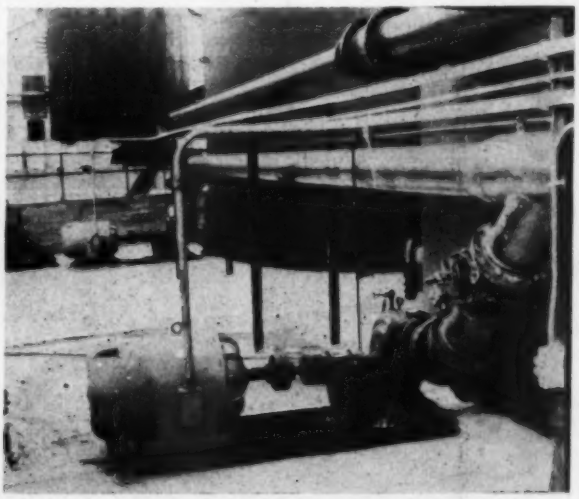


3—Screw conveyor (Link-Belt) receives pulp from the thickener and delivers it to inclined belt conveyor

4—Inclined belt conveyor goes to the top of the 40-ft. diameter by 40-ft. high storage tanks



7—Looking down into one partly filled storage tank. Note single nozzle through which water is pumped to reslush the pulp



8—Each tank has a Gould's stock pump for returning slush pulp to the wet room

use good kraft stock, screenings are used. Wet room rejects are stored in two 8½ x 17 ft. high tanks at low consistency. They are pumped to two large drainer conveyors, similar to the ones used on semichemical pulp, which discharge to a screw conveyor and thence to two 36 x 36-in. Jeffrey hammermill shredders through individual variable-speed screw feed conveyors. Excess over and above the feed to the hammer mills goes back to the storage tank.

Defibering semichemical pulp

Semichemical chips and screen rejects are defibered by nine Sprout-Waldron disk refiners. These are divided into two batteries comprising five primary refiners and four secondary refiners. The five primary Sprout-Waldrons are all new machines and are driven by 400-hp. motors. The four secondary refiners are all older machines that have been completely reconditioned, and are driven by 300-hp. motors.

Three of the primary refiners are employed to defiber semichemical chips and are fed direct from the drainer conveyors, while two of them are fed direct from the two hammermills which break up the screen rejects. The five primaries discharge to a common chest, where the two types of stock are mixed. From here, it is pumped to the secondary headbox, which feeds the mixed stock to the four secondary Sprout-Waldron units. Stock chests are equipped with Shartle propeller-type agitators.

From the secondary chest, the defibered stock is pumped to the machine chest of No. 4 machine, then to the jordans which lead direct to the paper machine fan pump. Broke from the machine is repulped and sent to the machine chest, where it is mixed with the pulp from the Sprout-Waldrons. Four Shartle-Miami No. 6 and one No. 2 jordans refine the stock prior to its going to the machines.

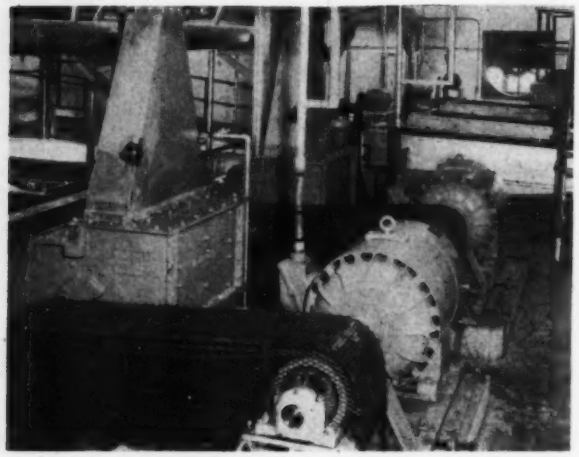
One of the unique features about the stock preparation and defibering system is that it is all electrically interlocked, so that if one piece of the equipment goes down, all related preceding equipment is also shut down. For instance, if one of the refiners on screen rejects goes down, it automatically shuts down the hammermill, the feed to the hammermill, etc. Actually, if any difficulty occurs, it is practically impossible for other related equipment to cause trouble.

Another unique feature of the new stock preparation room is that it is built with a contoured floor. This floor has numerous drains and the floor slopes properly so that each section drains readily.

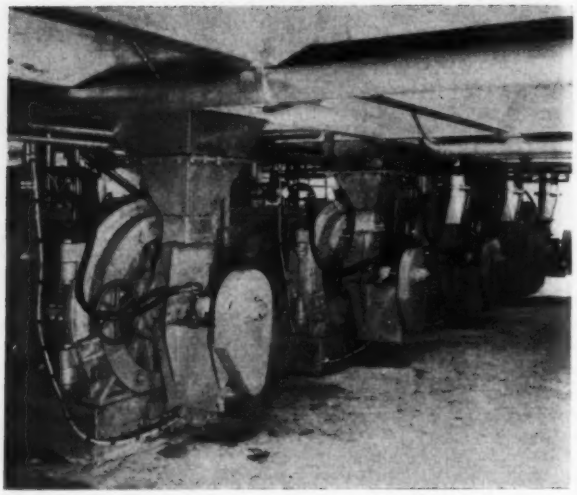
Gaylord's No. 4 machine was originally installed many

GAYLORD EXPANSION . . . . .

Semichemical defibering

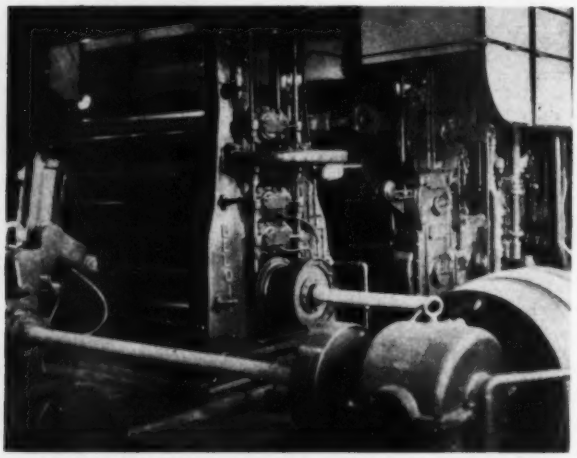


1—Two Jeffrey hammer mills shred kraft screenings for blending with semichemical pulp—three drainers for semichemical

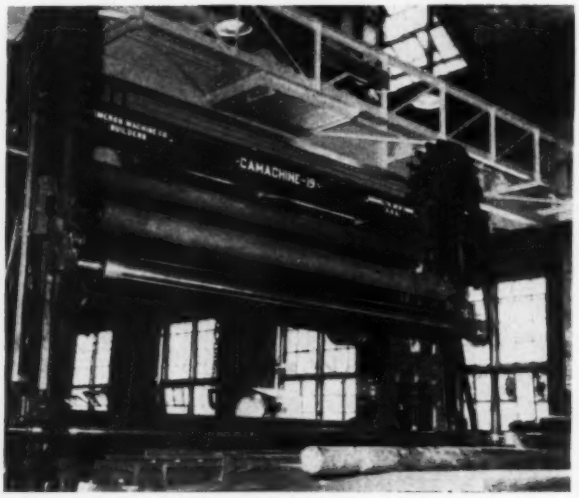


2—First two Sprout Waldron's defiber screenings while the back three defiber semichemical chips from the drainers

No. 4 Machine rebuilt

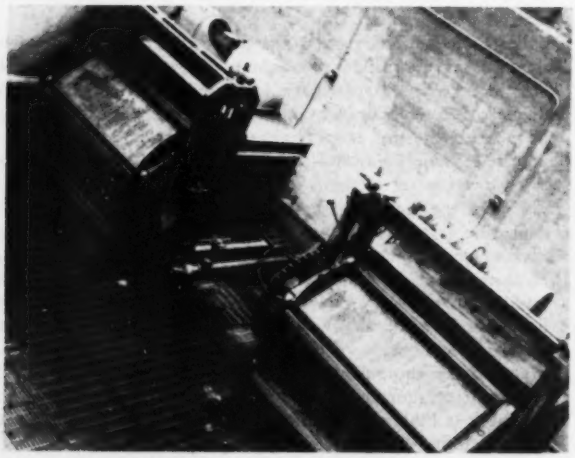


1—New Beloit calender on rebuilt No. 4 paper machine. Note enclosed gearing and new Beloit mechanical drive



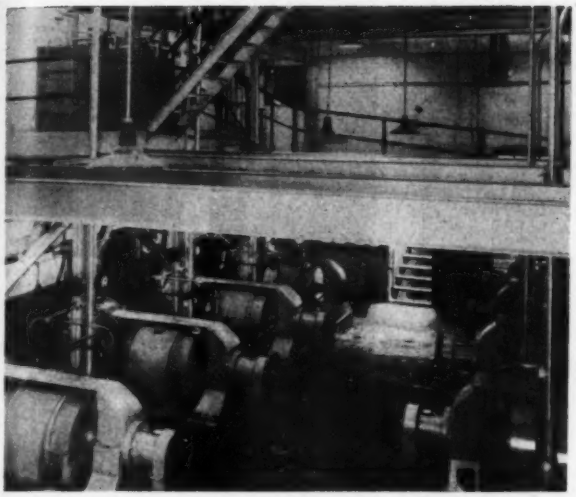
2—A new Cameron No. 19 rewinder has been added to No. 4 machine

White water and effluent handling

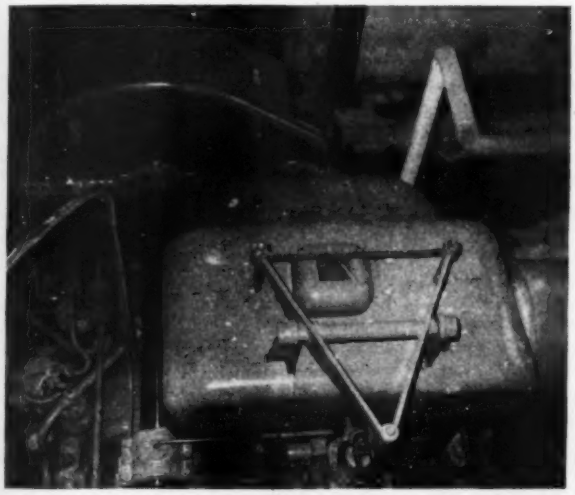


1—Two Chain Belt traveling screens remove solids and fiber from white water before it is reused in washer showers

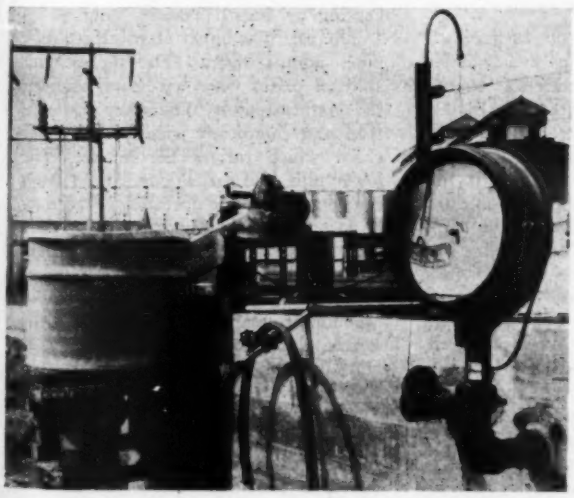
2—Parshall flume on sewer line replaces commonly used weir to measure flow



3—Mixed stock from the five primary Sprout Waldron's is pumped to a headbox which feeds the four secondary refiners



3—The lineshaft drive is powered by a new 780-hp. Westinghouse steam turbine—75 psi exhaust steam used in dryers



3—Sampling device and meter on sewer line—chain with sampling buckets drops 15-20 ft. to the underground sewer

years ago as a single-cylinder vat machine. Later, a Beloit fourdrinier type wet end was installed, and this machine was employed to make 9 pt. corrugating medium from semichemical pulp. Output was about 90 tons per day at speeds up to 525 fpm. By the addition of drying capacity, by widening the dryer section as well as lengthening it, the machine is expected to turn out about 175 tons per day of 9 pt. corrugating board at speeds up to 1000 fpm.

No. 4 paper machine rebuilt

The old fourdrinier was already wide enough, but two new suction boxes were added, making a total of six. The fourdrinier is equipped with a double shake and the conventional headbox. No. 1 suction press was already wide enough, but the second suction press is new. Both presses have rubber-covered rolls, and a rubber-covered lumpbreaker is installed over the couch.

The machine trims a sheet 122 inches wide, now that the dryers have been widened about 10 inches. The dryer part of the machine was completely rebuilt with new dryer frames, enclosed gears, and three sections of 38 new 60-inch diam. dryers. The first section of 14 dryers are 48 inch diam. and did not have to be widened. The rest of the old dryers were discarded.

A total of 52 paper dryers and 18 felt dryers are now employed. Top and bottom dryer felts are used on all sections. Felt dryers were rebuilt by actually lengthening the rolls. The new dryers are designed for 85 psi steam, while the old 48-inch dryers can handle 40-50 psi steam. Dryers are equipped with a Midwest-Fulton drainage system and a Bowser lubrication system. Doctors are employed in the first and last sections. A new Beloit breaker stack was employed between the No. 2 and 3 dryer sections.

A new J. O. Ross Engineering Co. hood and exhaust system, and a Ross-Grewin system have been installed on No. 4 machine. In addition, basement make-up units were installed to effect a balance of the air removal through the hood. Propeller fans are mounted on the wall to deliver air through finned heaters. By this means a large volume of air can be delivered at low velocity without sacrificing valuable storage and working space. Installation of ventilation equipment keeps the basement dry and comfortable and keeps the air flow vertically upward. A new Beloit calender stack was installed and the old Pope-type reel was rebuilt and is now air-operated. A Beloit unwind stand is followed by a new No. 19 Cameron rewinder.

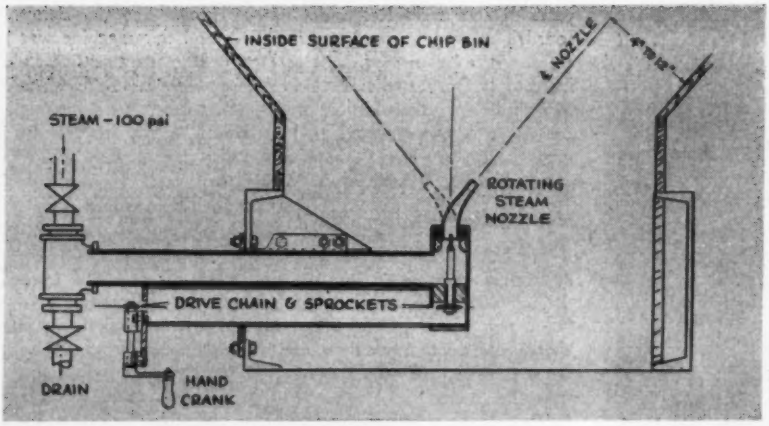
The machine is fully equipped with a new Beloit mechanical line-shaft drive powered by a new 780-hp. Westinghouse turbine drive. This turbine uses 140 psi steam and discharges with a back pressure of 75 psi exhaust steam. This steam is used in the dryers. The paper machine was re-designed and rebuilt by Gaylord's own engineering department in co-operation with the Beloit Iron Works.

Steam and power

In addition to the new recovery furnace, a Reilly Stoker Co. boiler was installed in 1948. It is rated at 210,000 lb. per hr. of steam operating at 450 psi. Total combined steam capacity of all power and recovery boilers in the mill is over a million pounds per hour. A new Westinghouse 7500 kw. 2300 volt turbogenerator was installed in 1948 to take care of increased power requirements. Except for the bark burning boiler and recovery furnace, all power boilers as well as the lime recovery kiln are fired with natural gas.

New construction throughout the mill was handled largely by L. O. Stocker Co., and electrical work by Rick Electric Co., both of St. Louis. Process design and engineering were handled by Gaylord's own technical and engineering staff.

Acknowledgment is made to W. F. Gillespie, John Goss, F. C. Ratliffe, and J. Sapp of Gaylord Container Corp. for their help and co-operation in the preparation of this article.



Hand operated rotary steam nozzle aids in . . .

Gordon Morseth

Victor Haner

GORDON MORSETH, now assistant general superintendent at Detroit Sulphite Pulp & Paper Co., formerly was at Puget Sound Pulp and Timber Co., Bellingham, Wash. . . . VICTOR HANER is resident engineer at Puget Sound Pulp and Timber Co., Bellingham.

Filling digesters from overhead chip bins

GORDON MORSETH
and VICTOR HANER

▶▶▶ THE FIRST STEP in establishing homogeneous chip dispersion within the digester is to obtain a uniform flow of chips from the storage bin to the digester or to the chip distribution device. It is the object of this article to discuss a device designed to attain uniform flow of chips from overhead chip bins.

The problem of bringing chips down from overhead bins and of maintaining a uniform flow of chips to the digester or the chip packing machine involves several considerations. A chip bin presents varying degrees of difficulty to the removal of chips. This depends partly upon how the bin is filled. For example, if the bin is filled slowly, or if the chips have remained in the bin for a relatively long period, the chips tend to pack more firmly. On the other hand, when the chips are dry, they flow more freely than when wet. Furthermore, when the chips are run into the center of the bin, they tend to bridge over. Ordinarily, it is difficult to arrange to fill storage bins in a manner conducive to easy chip removal, that is, without mechanical aid of some kind. The use of stationary steam nozzles, vibrating devices, air operated lungs, poking, and steam hoses to aid in chip removal is often considered inadequate.

Stationary steam nozzle ineffective

Investigation of stationary steam nozzles for chip removal from storage bins reveals that they are successful only to a limited degree, and that they are a fire hazard if not properly operated. Study shows that steam alone does little good except within a few feet of the nozzle; so that once the chips are removed from the immediate area of the nozzle, the steam is ineffective. However, if a few loose chips are allowed to come into the path of direct steam *within a few feet of the nozzle,* the chips will be propelled with great force along this path. This is the principle upon which the use of a steam nozzle is based: the violent propulsion of free chips in the direction of the path of the steam, and the resultant dislodging of other chips in the bin by the force exerted when the propelled chips strike the packed chips. For this reason we usually find the area directly in the path of steam issuing from a stationary nozzle will be cleared by the use of the nozzle. Once this very limited area has been cleared, the stationary nozzle is no longer effective and, if used further, the steam must be considered wasted.

Development of a new nozzle

The problem becomes one of finding a position where loose chips are available at all times and of directing this ammunition in the proper directions to dislodge the mass of chips from the bin. All of the chips leaving the bin must go through the mouth of the bin. It follows that the only location possible for a single nozzle to remove all the chips would be at the mouth of the bin. The nozzle must also be free to move in a path which would release all the chips. For square and circular bins this would be a circular path which, when projected, would form an inverted cone of angle depending upon the slope of the sides of the chip bin. A rotating nozzle would satisfy this demand. The nozzle must be at the vertex of this inverted cone (as in the drawing). When the nozzle is so located, the chips will be removed from the whole bin, allowing no hang up.

In designing such a nozzle, cognizance must be taken of the following:

1. The device must be easy to operate, strongly constructed, and must require little maintenance.
2. The nozzle must eliminate the necessity of pounding, poking, or other labor while assuring a full supply of chips to the hopper, digester, or chip packing device.
3. The device must eliminate any danger of fire within the chip bin.
4. When steam is used, the heat should be retained for the most part by the chips.

The design of a rotating nozzle which will fulfill the above conditions may be described by referring to the accompanying drawing. As may be seen in the illustration, the nozzle is first machined and then bent to the proper angle. In operation, it is forced against a thrust bearing by steam pressure from 90 to 150 lb. psi. The upper of two three-inch pipes admits steam. The pipes, with stiffener plates when necessary, support the nozzle assembly. The lower pipe protects and completely encloses the roller chain which rotates the nozzle. The lower pipe also carries condensate from the apparatus. The operating crank may be located at any convenient point near the chip bin mouth by a simple arrangement of chain and sprockets.

The construction permits a small amount of steam to escape around the nozzle, thus preventing any lodging of chips on the nozzle head or piping within the bin.

Removal of condensate

The steam connection to the rotating nozzle is provided with a drain valve outside the bin immediately ahead of the apparatus. In the event of leakage

in the operating valve when the nozzle is not in use, this safety feature would remove any escaping steam before entering the nozzle.

It may be noted again that this feature, that of removing condensate or steam leakage, is also provided for in the design of the rotating nozzle. The lower pipe permits steam leakage to escape *outside* the bin itself even if the regular drain valve were not open.

Prevents chip bin fires

Chip bin fires may develop when chips which have been left in the storage bin over a long period (perhaps 24 hours or longer) are heated. This heat can be supplied by leakage of steam into the bin. A fire, caused by the escape of live steam to a chip bin, may develop in chips which have had sufficient time to dry and then are kept at high temperatures in the absence of air circulation for a considerable time.

These chips may be in a "dead" portion of the bin not being removed with each succeeding cook. Thus, when stationary steam nozzles located at points *above* the mouth of the bin have been used and subsequently shut off after filling the digester, chips may remain a few inches from the nozzle over an indefinite period. In practice, it is not likely that chip bins, generally speaking, are emptied. Hence, chips in the vicinity of nozzles located at points above the mouth of the bin, if repeatedly heated by steam leakage in the absence of air circulation, may be subject to spontaneous combustion. That this is not possible when using the rotating nozzle located at the mouth of the bin is one of the salient features of this apparatus. It may be emphasized that the drainage system incorporated in the rotating nozzle, as well as provided for separately by a drain-off valve, and the location of the nozzle after each filling tend to make the possibility of fire negligible.

Once the fire hazard has been eliminated, the use of steam to remove chips from the storage bin proves more economical than the use of air. The rotating nozzle located at the mouth of the bin enables the operator to use this steam to its full advantage.

Reviewing the features of the design of the rotating nozzle, we find a simple and sturdy device requiring very little maintenance, which permits the use of steam without danger of fire to aid in the efficient removal of chips from overhead chip bins.

Installation

It was previously stated that the proper location of a rotating nozzle was at the vertex of the inverted cone formed by the sides or tangent to the sides of the chip bin. However, in actual practice the path of steam should be directed along a path parallel to and from six to twelve inches from the sides of the chip bin. Undue wear from the abrasive action of chips is avoided in this manner. The nozzle assembly should be located so that the center of the nozzle is at the vertex of this path. The drawing will best illustrate a typical installation. In planning an installation, consideration must be given to a location which will readily provide drainage and will be accessible for operation.

Operation

The actual operation of the rotating nozzle consists of slowly rotating the crank so that a sufficient supply of chips is always available at the chip bin mouth or filling hopper. As the storage bin becomes nearly empty, the nozzle may be directed towards any hang ups which exist. The operator will know from the sound of the jet where to direct the steam. In any event, a slow rotation will accomplish the desired result.

Automatic operation

The nozzle may be made to operate automatically on the principle of a steam turbine, but the advantages of this are not too apparent, while several disadvantages present themselves. For instance, in other than circular bins, the chips are apt to hang up on one side and run freely on the other side, with the result that one side may empty first. In this case the nozzle, if rotated automatically, would waste steam on the empty side with each rotation. On the other hand, when operated manually, all the steam can be directed at the chips remaining in the bin. A steady flow to the digester is thus assured. Moreover, the device must be much more complicated if automatically operated. It is difficult to control the speed of a steam driven nozzle of this type because the load varies greatly. In fact, no attempt should be made to rotate the nozzle when it is surrounded by chips; and indeed this is not necessary when the mouth of the bin is filled, as this is the object of the nozzle—to bring the chips to the mouth of the bin. Chips will not hang up on the nozzle itself as it becomes the center of the possible jam; thus, the nozzle acts as a bottle does when hung in the center of a coal hopper. Also, as we have noted, sufficient steam is allowed to escape around the nozzle to remove all possibility of chips resting on the supporting piping.

Conclusions

Actual operation over a seven-year period proves the rotating nozzle to be an effective device for removing chips from overhead chip bins. The danger of fire which is present in the ordinary stationary nozzles is eliminated in the design and operation of the rotating nozzle. The design provides a rugged, compact machine requiring little maintenance. The operation of the nozzle is very simple and obviates the use of all other methods, such as vibrating devices and steam hoses, for removing chips from storage bins. The installation of the rotating nozzle to provide a continuous supply of chips to the digester filling hopper may be considered the first step towards obtaining control over the distribution of chips within the digester.

Kraft pulp from old Railroad cross ties

About 150,000,000 cu. ft. of wood is discarded each year by American railroads in the form of used cross ties. Experimental work at the Southern Research Institute indicates that this discarded wood might be used for making pulp and paper. Although numerous species of wood, such as fir, pine, oak and gum, are commonly used for cross ties, the pulping experiments were carried out on discarded creosoted pine cross ties taken from a railroad in the vicinity of Birmingham, Ala.

From the experimental work, it was concluded that (1) by use of a mild kraft process on old creosoted pine cross ties, a good quality pulp was obtained; (2) the old cross tie kraft has tear, burst and freeness properties similar to a standard commercial southern kraft made from new wood, and (3) assuming a yield of 50 per cent from new wood and 40 per cent from old cross ties, the estimated material cost per ton of pulp is about $8.00 cheaper for the old cross ties.

Estimation of costs are subject to the effect of many variables and cannot be hard and fast without inclusion of these variables. It does seem that money might be saved and timber conserved by including discarded creosoted ties as a raw material for several grades of unbleached kraft papers. Properties found in this study suggest old cross tie pulp for use in saturating papers, painters' cloth, medium strength wrapping papers, and building papers where some moisture and decay resistance of the residual creosote might be valuable. Generally, the cross tie pulp is more resistant to water and hydration but no special difficulties were encountered on beating.—R. C. Sproull, L. Methvin and H. G. Hard, Jr., Southern Research Institute, Birmingham, Ala. From a paper given before the Joint Meeting of the Southeastern and Southern Division of the American Pulp and Paper Mill Superintendents Association, held on October 12-14, Asheville, N. C.

SAFETY DOES PAY! Not only with top honors and awards, but in lives saved which brings security and happiness to employees and their families. A. Scott Dowd, pres. of Fritz Publications, Inc., presents the Edward Benton Fritz Memorial Trophy, Grand Prize in the Paper Industry Safety Contest, to Wm. T. Webster, vice pres. and gen. mgr. of National Container Corp., Jacksonville, Fla.

BACK HOME IN JACKSONVILLE, Mr. Webster formally presents the Grand Prize to the employees with fitting ceremonies. John C. Keegan, company safety director, is shown holding Trophy with Mr. Webster. Others in the group were part of delegation that went to Chicago for the Annual Safety Congress. Left to right, they are: Brownie Easterling, Fred Balkcom, and C. R. Kennington

The Paper Industry Safety Trophy Awarded

SAFETY DOESN'T JUST HAPPEN! Nor can any company expect to acquire an accident-free record through circumstances or luck. Safety achievement, like any worthwhile project, requires planning. But plans do not bring results unless every member of an organization feels a personal responsibility for working out the program undertaken.

When the National Container Corporation's Kraft Pulp and Board Division, Jacksonville, Florida, was awarded the Edward Benton Fritz Memorial Trophy, given each year by THE PAPER INDUSTRY as the Grand Prize for the best over all achievement record in the paper industry safety contest, the company's management, production executives, safety supervisors and committee, and every employee in the plant realized that this record had been accomplished only by personal participation under the slogan "Safety comes before production." Results proved that production did not suffer, but safety benefited.

Sixteen months without an accident

The record that put National Container at the top of the list of group winners among 251 mills was—*a total of 1,510,830 man-hours without a lost-time accident for the period from September 4, 1948, to January 3, 1950.* More than 500 employees worked more than 16 months without a lost-time accident. This is the first time that a southern mill has won the grand prize for safety achievement.

Since the company began operating the Jacksonville plant early in 1938, it has made a constant record of progress (see THE PAPER INDUSTRY Sept. 1950 pp. 614). Production and efficiency continued to increase but safety lagged. It was not until the problem was laid before plant manager W. C. (Judge) Cary, that the safety program really began to move ahead under its own steam. When both supervisors and workers found that Judge Cary meant business when he said "Safety comes before production," they realized it wasn't just another slogan but a basic working rule. The slogan became a working rule that now characterizes the attitudes of top management, supervisors and workers alike.

A brief outline of the program which proved so workable that the company won top safety honors is given here:

I—General Safety Committee

This committee is composed of both workers and supervisors and maintains a constant check on all accidents, initiates new ideas and keeps a watchful eye on the plant as a whole. Each year a chairman is selected to head this committee, regardless of his job classification. Back of the work of this committee is the realization that the furtherance of any accident prevention program leans heavily on labor-management team work.

II—Group meetings . . . departments . . . shifts

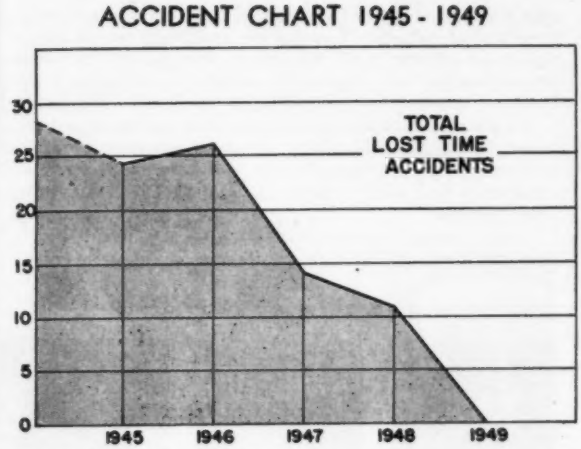
Each department and shift holds periodic meetings to discuss hazards, to make recommendations for better housekeeping and reviewing of safety program. These meetings are conducted by employees elected to serve as chairman. A new chairman is elected every three months. In addition to the chairman, three committeemen are elected to serve as safety observers not only in their respective departments but throughout the plant. The Safety Director acts as secretary for these groups. All suggestions and recommendations brought up at these meetings are investigated and then referred to the General Safety Committee for final action.

III—Repair shutdowns

Safety inspectors are appointed during repair shutdowns. These periods long have been the "bug-a-boo" of our industry and have caused many severe accidents. The Safety Director appoints workers who have outstanding safety records to act as full time, roving safety inspectors during all repair shutdowns. These inspectors are on duty throughout the work schedule.

IV—Safety promotion

An extensive promotional campaign is carried out to further the advertising of the safety program. Posters are used widely as are actual accident photographs. Inter-department competition is fostered and many types of contests have been con-



HOW ACCIDENTS FELL—"Safety comes before production" is not just a slogan at National Container Corp. It is the basic working rule that characterizes the attitude of top management, supervisors and workers alike. Co-operation and interest of all employees is maintained at a high level by stimulating competition and by placing responsibility on the workers and their supervisors.

THE LIGHT IS ON, and they will work hard to keep it from going out—The Green Cross for Safety, the green light which says "Go," or the green light which indicates a scoreboard with no record of accidents. National Container Corp. employees have enlisted in a crusade to "Keep the Green Light Burning . . . Make this the safest mill in the world"

National Container Corp., Jacksonville

ducted. The company's bi-monthly publication, *National Container Digest,* works in close co-operation with the Safety Department by publishing articles on safety and regularly making use of the interplant safety standings.

V—Equipment and facilities

The company has spared no expense to provide the necessary safety equipment in all of its plants—safety shoes, guards, ladders, hoods, goggles, gloves, and many other kinds of equipment. Good nurses are always on duty and the modern first-aid room naturally lends confidence and provides the best of protection to every worker in the plant.

"Think thru then follow thru"

When first notified of this award for safety achievement, W. T. Webster, vice president and general manager of National Container, followed through in typical fashion. (The company's favorite slogan is "Think Thru then Follow Thru" and placards bearing this slogan are posted conspicuously throughout the plant). Arrangements were made for a group of representative employees to attend the National Safety Congress in Chicago—at which time the award was publicly presented before the Pulp and Paper Section of the Congress.

Included in this group, in addition to Webster, were: D. J. Brett, Jr., personnel director; J. C. Keegan, safety director; W. J. Miles, Jr., pipefitter supervisor; L. L. McLeod, asst. paper mill supt.; F. R. Balkcom, property supervisor; B. Easterling, pres. Local 418 IBPM (1949); and C. R. Kennington, chairman of General Safety Committee.

Most important part of the "follow thru" was carried out when the delegation returned from the National Safety Congress bearing the award plaque. In order that every employee of National's Kraft Pulp & Board Division might realize the full significance of the occasion and be spurred on to greater safety efforts, ten or more special safety award meetings were held at the mill during the week following the Congress.

Every employee and supervisor attended at least one of these meetings, which were held for all shifts and all groups. Mr. Webster and others who attended the Congress reported on what had transpired at the Chicago meetings and brought to all employees an inspiration to continue unabated their efforts to prevent accidents and unsafe practices. Already the mill is on its way to further achievement, having gone eight months, since February 1950, without a single lost-time accident.

As a constant reminder, the award plaque, along with other safety trophies, will be permanently placed in a conspicuous position where they will be seen by all employees entering and leaving the mill. However, a token reminder of this safety event, a stainless steel pen knife, was given each employee at the special safety meetings. The knife was mounted on a card containing an appropriate safety message urging that every effort be made to repeat the 1949 record in the year to come.

What National's management says about safety

"SAFETY, like any other function in industry can be achieved with the proper attitude. You must *Think Thru Then Follow Thru* the plan. No matter how anxious workers and supervisors may be to work safely, if top management is not in accord, is indifferent, or is unwilling to approve the costs necessary to bring about a safe plant, the program will remain a failure.

"Unless the Safety Director is permitted to purchase devices needed to accomplish the result wanted, he will feel like the piano player who is asked to play a tune without a piano. When everyone including top management has been convinced that safety pays, then the achievement of a successful program rests to a great extent in the leadership of the Safety Director.

"It is the function of the Safety Committee and the Safety Director to insist on good housekeeping; providing a place for everything and thereafter making sure that everything is in its place. Thus, each man begins to realize that there is a proper and an improper way, not only of keeping things, but of doing things. Top management must accede to the suggestions of the safety committee to expend monies for safety devices which are

Albert H. Edwards

Samuel Kipnis

William T. Webster

worthwhile and buy equipment not only on price but on its ability to hold up under stress and strain. Proper signs must be provided to concentrate the mind on the safety project such as 'The Best Safety Device Is a Safe Worker.'

"When the attention of every man has been focused on safety, and when he becomes interested, he then will assume his part of the responsibility to attain the final result—*the perfect safety record.*"

—SAMUEL KIPNIS, *President, National Container Corp.*
ALBERT H. EDWARDS, *Vice President*
WILLIAM T. WEBSTER, *Vice President and General Manager*

W. C. "Judge" Cary

"The first step in any safety program is to achieve unity of purpose. Not until every individual in the plant put safety ahead of all other considerations was our safety program fruitful. Co-operation and teamwork are necessary for the success of any group effort, whether it be winning a ball game, making production records, or preventing accidents.

"Since competition is one basis for human endeavor, we have stimulated competition between departments to develop greater safety consciousness. Safety, as a means of self preservation, is primarily an individual responsibility. Inter-department competition or group activity, however, causes individuals to pool their efforts to help each other—to develop teamwork in achievement of a goal. It is this teamwork that has made National Container a safe place to work.

"One of the ways we accomplished our objective was to select men from the ranks to serve on the safety committee. Regardless of his actual job status, within the sphere of safety and accident prevention, each man on the safety committee is a member of the management team. The committee has both responsibility and authority to act on safety problems. Honesty and sincerity by both management and labor representatives on the safety committee have done much to make our safety program successful."

—W. C. "JUDGE" CARY, *Plant Manager*

D. J. Brett, Jr.

John C. Keegan

"We believe it is the desire of every one to avoid accidents. To some workers this achievement is easy as they have formed safe working habits while learning their trade. There are others though who have difficulty in correcting unsafe acts—usually with a variety of causes too numerous to mention here. The ultimate goal of our safety program has been built around the conversion of accident prone workers to thinking and performing their duties in a safe manner. As a result, each and every worker became a 'safety man' and in reality became 'his brother's keeper.'

"Fundamentally, all safety programs are similar, however, it is our belief that until all of us assume the responsibility of looking out for the other fellow as well as ourselves, there will continue to be a wide variation in the success or failure of any safety program."

—D. J. BRETT, JR., *Personnel Manager*
JOHN C. KEEGAN, *Safety Director*

Supervisors make safety program work

William J. Miles

L. L. McLeod

F. R. Balkcom

"In my opinion the reason that we have been fortunate enough to have a good safety program and a safety record is thru co-operation. This is achieved through the effort and understanding of our supervisors with relation to the men under them. Each supervisor has an understanding of the man's problems both on the job and off. He takes an interest in all problems and does what he can to assist the men in working them out. This will result in a happy as well as a safe worker.

"Another function of the supervisor in our safety program is the training of new employees with reference to job hazards, the use of proper tools, and general mill safety rules. In addition, the supervisor points out those spots throughout the operation which may prove injurious to the worker if he was not familiar with the hazards involved.

"Close relationship of supervisors and workers has been the aim here at National and the accomplishment of this plus the constant reminding to work safely, has contributed a great deal toward the perfect record attained by the mill during 1949."

WILLIAM J. MILES, *Pipefitter Supervisor*

"A large percentage of industrial accidents are caused by human failure, which can only be controlled by supervision. Failure to issue and enforce instructions, poor discipline, improper and unsafe practices are not only conditions which cause accidents, but they also affect production. The supervisor must accept the responsibility for accidents and recognize the close relationship between safety and efficient production.

"With a thorough knowledge of the safety program the supervisor is able to create a feeling among his employees that everyone is pulling together to prevent accidents and that everyone is needed. The Company is cooperating by spending money to make machinery and working conditions safe, the supervisor is doing his part by instructing employees in safe practices and the employees in turn do their part by complying with these instructions, using safety devices provided and working safely."

—L. L. McLEOD, *Assistant Paper Mill Superintendent*

"As a supervisor of men whose job requirements necessitate operating over the entire plant, it is my duty to constantly be on the alert for all hazards when placing my crew on various jobs. It is a supervisors responsibility to know in advance the necessary precautions, safety equipment and working tools which will be needed in order that the duties of the crews may be efficiently, economically and above all safely performed.

"In turn, the co-operation of each man performing his duties brings to our attention any hazard which may have otherwise been overlooked. By our constant vigilance and study of all

hazards we can and we will eliminate unsafe conditions and practices that might present themselves throughout the mill.

"We, as supervisors, in discussing safety with our men, are constantly pointing out that an injury not only causes suffering to the worker but to his family. Loss of pay, worry, and above all human suffering is felt heavily in any household where an accident has made its imprint on one of its members."

—F. R. BALKCOM, *Property Supervisor*

Union leaders for safety

Brownie Easterling

Charlie Smith

William F. Hunteman

"The Safety Program as set up at National Container Corporation is an employee-participation program where the employees attend regularly scheduled Safety Meetings and are encouraged to take an active part by making suggestions to eliminate hazards and to improve working conditions throughout the mill. As a result of these meetings, many helpful suggestions are passed on to the employees in an effort to teach them to do their jobs the safe way. This is in reality a constant safety training program for each worker.

"Our Union is proud to be a part of such a program, and at times have had the general chairman elected from among our ranks. We believe that our safety program has been developed along the right lines, and that 'safety is indeed everybody's business.' Our 1949 achievement of having won the Fritz Memorial Safety Award is a tribute to our program and to the work of every man and woman in the Division whether they be a part of management or an hourly-paid worker. We realize in winning the Trophy for 1949 that we must and will continue to achieve an outstanding safety record and thus enable us to be considered again for future safety awards."

—BROWNIE EASTERLING, *President, Local 418 IBPM*

"The officers and men of Local 418A are glad that our company feels that safety is as important as production. We wish to let everyone know that the union and its members are behind the safety program one hundred per cent and will do all we can to insure that we have and maintain a safe plant. We will continue working safely each and every day and constantly will be on guard to prevent accidents. 'A house divided against itself cannot stand.' We feel that we are a big family composed of union and management, and because we have worked together as a team, we have achieved this safety record."

—CHARLIE SMITH, *President, Local 418A, IBPM*

"Local Union 982, IBEW, has and will continue to support the safety program in effect in the National Container Corporation mill in Jacksonville, Florida. The members realize the necessity of being on the alert and practicing safe working methods at all times as theirs is a hazardous occupation, and one thoughtless moment may mean an accident.

"This local impresses upon its members that a moment of thoughtlessness, neglect or carelessness, may not only involve the electrical worker in an accident but also those not concerned with this particular class of work. The workers are constantly reminded to consider all conductors of electricity as bare and alive, whether energized or not. This is done to make the men more cautious in checking—especially high voltage conduits that are supposed to be dead. In fact, we feel this is very important as it could turn out like the 'gun that was not loaded.' Continuous caution has paid off—the Trophy is the proof."

—WILLIAM F. HUNTEMAN, *Shop Steward, Local 982, IBEW*

History of the Major Trophy

Twenty-six years ago the first Major Trophy given in the contest among mill members of the Pulp and Paper Section of the National Safety Council was awarded by THE PAPER INDUSTRY magazine to the Nekoosa-Edwards Paper Co., Port Edwards, Wis. This contest lasted but one month. The succeeding contest ran for eight months; thereafter for six months until 1932 when the contests were extended to a full year. Since 1932, the awards have been given for a twelve-month record.

In 1939, THE PAPER INDUSTRY Major Trophy became the Edward Benton Fritz Memorial Trophy, awarded by Fritz Publications, Inc., publisher of THE PAPER INDUSTRY.

Twenty-six major trophies awarded since 1925 have been won by the following mills:

Mills that have won the Grand Prize in The Paper Industry Safety Contest

Nekoosa-Edwards Paper Company, Port Edwards, Wisconsin
Kimberly-Clark Corporation, Neenah, Wisconsin
International Paper Company, Riley, Maine
St. Croix Paper Company, Woodland, Maine
Kimberly-Clark Corporation, Niagara Falls, New York
The Crystal Tissue Company, Middletown, Ohio
The Champion Coated Paper Company, Hamilton, Ohio
Cornell Wood Products Company, Cornell, Wisconsin
St. Croix Paper Company, Woodland, Maine
St. Croix Paper Company, Woodland, Maine
St. Croix Paper Company, Woodland, Maine
Hollingsworth & Whitney Company, Waterville, Maine
Bird & Son, Inc., Philipsdale, Rhode Island
Anglo-Canadian Pulp & Paper Mills, Ltd., Quebec
Anglo-Canadian Pulp & Paper Mills, Ltd., Quebec
Strathmore Paper Company, Woronoco, Massachusetts
The Mead Corporation, Nashville, Tennessee
U. S. Gypsum Company, North Kansas City, Missouri
The Flintkote Company (Pioneer Div.) Los Angeles
The Flintkote Company (Pioneer Div.) Los Angeles
Marathon Corporation, Ashland, Wisconsin
Kimberly-Clark Corporation, Niagara, Wisconsin
Strathmore Paper Company, Woronoco, Massachusetts
Container Corporation of America, Carthage, Indiana
West Virginia Pulp and Paper Company, Tyrone, Pennsylvania.
National Container Corp., (K. P. & B. Div.), Jacksonville, Fla.

THIS DELEGATION of National Container Corp. representatives* pose proudly in front of the Stevens Hotel, Chicago, just after they had attended the opening session of the Pulp and Paper Section of the National Safety Congress and heard the Kraft Pulp and Board Division of their company awarded top honors in the safety contest embracing 251 mills of the paper industry

(*)Delegation photo—(Left to Right) Front Row: C. W. Wilson, Big Island, Va.; J. C. Keegan, W. T. Webster, and D. J. Brett, Jr., Jacksonville; and B. A. Brown, Ontonogan, Mich. Back Row—Brownie Easterling and Cameron R. Kennington, Jacksonville; E. J. Marquardt, Tomahawk, Wis.; F. R. Balkcom, L. L. McLeod, and W. J. Miles of Jacksonville.

Ten year progress report on The Institute of Paper Chemistry's . . . . . .

Pulpwood plantation in miniature

IRVING H. ISENBERG
Research Associate
The Institute of Paper Chemistry

▶▶▶ DATA ON THE survival and growth of a small pulpwood plantation during its first five years were presented in an article published in *The Paper Industry and Paper World*, May, 1945 (p.220). In April, 1940, a total of 400 transplants (50 trees each of eight species) were set out in 4 x 5 ft. spacing in the ravine to the rear of the main building of The Institute of Paper Chemistry at Appleton, Wis. Measurements on height, growth, and survival counts have been continued annually and the data for the second five-year period (1945 to 1949) are presented in Table 1.

After five years in plantation (total age, eight years), the survival was 75 per cent, the average height was 2.7 feet, and the tallest tree was 9.0 feet.

After ten years in plantation (total age, 13 years), the survival is 70 per cent, the average height is 8.0 feet, and the tallest tree is 25 feet. As can be seen in Table 1, some species have done much better than others. The principal causes of death and injury appear to have been excessive soil moisture for red and white pines and sun scald for balsam fir. Other contributing factors have been: weed and volunteer tree competition, winter drouth, rabbits and mice, larch sawfly, pine needle rust, resin gnat, white grubs, and snow. Some replacements have been made, but these will not be discussed.

The height data at the end of the 1949 season are analyzed more thoroughly in Table 2, which shows the distribution of trees in the various arbitrary height classes.

The basal area is a value used considerably in the management of the forest. This is the total area covered by the cross sections of the tree boles at a point 4.5 feet above ground level (nominal breast height) and is usually expressed on an acre basis. The basal area data are presented in Table 3 in terms of square feet per acre by years.

Measurements have been continued on selected trees of each species to determine the period and rate of height growth for these species for this vicinity. These phenological studies have been in progress nine years. These data will be reported when further measurements have been made.

Table 3—Basal area of trees

Year	Sq. ft./ acre	Year	Sq. ft./ acre
1943	0.03	1947	4.70
1944	0.20	1948	7.60
1945	0.75	1949	10.90
1946	2.35		

Table 2—Distribution by height classes

Species	Height Class in Feet: Below 3.0	3.0-4.5	4.6-5.9	6.0-9.9	10.0-14.9	15.0-19.9	Above 20.0	Total
Jack pine	....	....	1	11	13	13	1	39
Scotch pine	2	....	1	6	19	9	....	37
White pine	10	6	4	8	....	....	....	28
Red pine	4	10	5	1	....	....	....	20
White spruce	15	16	7	8	....	....	....	46
Norway spruce	5	11	16	14	....	....	....	46
Balsam fir	19	7	....	1	....	....	....	27
European larch	....	....	....	2	7	17	11	37
Total	55	50	34	51	39	39	12	280

Table 1—Height, growth, and survival of trees (Fifty trees of each species were used in the initial planting)

Species	1944 No.	1944 Height-ft. Av.	1944 Height-ft. Max.	1945 No.	1945 Height-ft. Av.	1945 Height-ft. Max.	1946 No.	1946 Height-ft. Av.	1946 Height-ft. Max.	1947 No.	1947 Height-ft. Av.	1947 Height-ft. Max.	1948 No.	1948 Height-ft. Av.	1948 Height-ft. Max.	1949 No.	1949 Height-ft. Av.	1949 Height-ft. Max.
Jack pine	41	5.3	9.0	41	6.6	11.2	41	8.4	13.5	40	10.0	15.9	39	11.1	17.5	39	12.4	20.5
Scotch pine	40	3.3	5.3	39	4.4	7.2	38	5.9	9.6	37	7.6	11.8	37	9.8	15.2	37	12.0	17.7
White pine	34	1.5	2.5	32	1.7	3.1	31	2.2	4.5	28	2.9	5.6	28	3.5	6.4	28	4.2	7.7
Red Pine	25	1.5	2.8	24	1.7	3.1	22	1.9	3.5	20	2.4	4.1	20	3.1	5.0	20	3.9	6.1
White spruce	47	1.6	3.1	47	1.9	3.8	47	2.3	4.6	46	2.8	5.8	46	3.4	7.3	46	4.0	7.9
Norway spruce	47	1.9	3.6	47	2.5	4.2	47	3.0	5.3	47	3.7	6.8	47	4.4	7.8	46	5.1	9.3
Balsam fir	30	1.1	2.8	30	1.3	3.6	28	1.5	4.3	28	1.5	5.1	28	2.0	5.7	27	2.4	6.1
European larch	38	5.0	8.2	38	7.2	11.3	37	9.4	13.8	37	11.5	18.4	37	14.4	21.0	37	17.5	25.1
Total	302	2.7*	9.0	298	3.5	11.3	291	4.5	13.8	283	5.6	18.4	282	6.8	21.0	280	8.0	25.1

(*Weighted average)

Paper and paperboard making—IX

HARRY WILLIAMSON

Cylinder Machine . . . The Use of Baffleboards

AS WE STUDY THE TREMENDOUS VOLUMES of water used to make approximately 42 pounds of paper per minute on a revolving cylinder mold as shown in the flow diagram (Figure 3) and connote these volumes with the fact that to get *even* formation of paper then each square inch of forming surface must be supplied *continuously* with *equal* volumes composed of an equal *percentage* of *fiber* and *water*, we realize the *necessity* of some means to control and distribute the flow force of this liquid mass.

Even DISPERSION of the fibers throughout the liquid volume, and even DISTRIBUTION of the total liquid volume over the FORMATION area of the wire mesh is our objective.

Too much violence of flow to maintain dispersion will cause eddies and currents and therefore UNEVEN DISTRIBUTION; we gain one at the expense of the other. *Too little* violence or turbulence in an effort to prevent eddies and currents and we have not ENOUGH ACTION to maintain dispersion and we get flocculation of fibers into bundles or lumps.

We are, in this question of *control* of liquid volume flow speed, between the devil and the deep blue sea. In addition, we have the potential variables of volume and velocity caused by the freeness or slowness of the stock used and the changes in consistency or percentage of fiber to water in the mixed volume as we go to heavier or lighter ream weight sheets and corresponding changes in machine speed which do not always mean the same proportionate tons per hour produced.

To further compound the difficulties of operating flow control on a multiple cylinder mold machine making folding box board, a four stock system is used for economical and competitive reasons.

For example: Making a No. 1 patent white, news back folding boxboard, the furnish on the various molds of an eight-mold machine will be composed of the following types of stocks, all with their own formation behavior.

No. 1 Mold: Over-issue news. Clean newsprint which has been formed from approximately 88 per cent groundwood and 12 per cent unbleached sulphite. Groundwood forms up tight and behaves as slow stock even without any beating.

No. 2 mold: News. Same as No. 1 in operation only possibly containing fine dirt which is difficult to screen. Formation behavior the same as over-issue news.

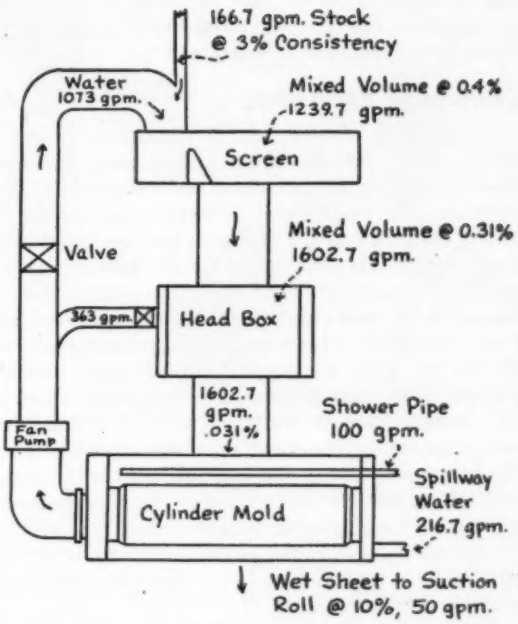


Fig. 3—Flow diagram. Counterflow cylinder mold making 0.16 patent white @ 41.66 lb. per minute per mold. Eight molds equal 10 tons per hour. Machine trim 128 inches, machine speed 585 fpm

Molds Nos. 3, 4, 5 and 6: Mixed papers. A miscellaneous mixture of all kinds of papermaking fibers. Corrugated clippings, kraft wrapping and bag papers, office waste predominately sulphite base, news, fly leaf and dodger leaflets containing groundwork, an unpredictable heteraganeous mixture. There are two things one can be *certain* about in mixed papers. One, they will contain all the filth and junk the traffic will bear and, two, because they will contain a higher percentage of long fibered stock than the groundwood news, and hot water is used in their disintegration, the behavior of mixed paper stock in formation will be more generally free than the news.

No. 7 mold: Generally used as the underliner mold whereby three to four points caliper of cheaper furnish can be formed into a sheet, covering up the dirt spots left in the filler stock and forming a firm foundation for the liner sheet made primarily from higher priced stocks. Fly leaf shavings composed of sulphites, soda pulps, and groundwood loaded with clay and other loading materials. Formation behavior more slow than mixed papers but not as slow as news.

No. 8 mold: The LINER mold. Bleached sulphites

and bleached soda pulps, virgin stock, in the proportions of 60 per cent to 80 per cent sulphite to 40 per cent to 20 per cent bleached soda pulp according to the caliper of board being made, the higher the caliper the greater the proportion of sulphite, the longer fibered stock to fold better under the creasing rule. Formation behavior on the free side unless well beaten despite the use of short fibered soda pulp. Soda pulp can not be hydrated; however, we have noted that as far as formation is concerned the shorter the fiber the *smaller* the voids between the fibers during the forming period. In well controlled mills the liner, sub-liner and back-liner stock are *all* beaten to a definite freeness or water drainage rate to bring the TIME RATE of formation on the individual molds forming these sheets to a more nearly equal rate.

Control of Formation

In speaking of CONTROL of formation during this discussion of vat and circle arrangement the reader must constantly bear in mind we are speaking of the physical and mechanical arrangements on the MACHINE only. Study of the chapters on beating and hydration will show that by far the greater means of operating control is in the apportionment of the stock formulae and in the degree of stock preparation. However, regardless of the stock preparation the VOLUMES OF WATER used *must* still be adequately controlled and we cannot rebuild the vat arrangement every time we change grade or weight. The permanent part of this physical arrangement must therefore conform to the best operation of the *average* grades to be made and the *adjustable* part of the physical arrangements must have a *range* of adjustment which will permit us to still make commercial paperboard with any normal variation of stock preparation or weight change which may be presented to us.

There is the problem of baffle board arrangement in the receiving compartments of the various vats in the operation of a multiple cylinder machine to make folding boxboard as far as the FLOW SPEED of the mixed volume on the way to the circle is concerned.

That, of course, is also the problem which has so far prevented us from achieving greater linear foot speed per minute; the water used as a formation medium is also the ACTUATING FORCE to *hold* the forming sheet on the surface of the revolving mold against the adverse forces which tend to make the sheet FALL OFF the formation area, something which *cannot* happen in fourdrinier operation. The operating trouble and lost time through drop offs when making a sheet higher than 0.040 on a machine whose *best running condition* is arranged for 0.024 is mute evidence of our limitations.

When making such specialties as imitation press board, milk bottle stock, tag boards, etc., by cylinder machine operation the problem is much simplified as all the stock used on each mold is the same in TYPE and DEGREE of beating development for the grade being made. The freeness is the same and the only reason to change the method of vat supply arrangement to the individual circles would be to make more or less points of caliper on the individual mold.

Similarly, the manufacture of jute liner board only calls for the use of two distinct types of stock in operation at the same time; mixed papers and the top liner stock composed of kraft clippings and good corrugated waste. Here the usual operation is six molds on mixed papers and two molds on liner if the Mullen test is low or a mixture of mixed papers and top liner stock on the seventh mold with a full top liner sheet on No. 8 if the Mullen test is running high.

Counterflow Vats Widely Used

The modern overflow vat, designed primarily to achieve higher speeds, eliminates the use of, baffle boards entirely as a means of control. Volume is taken care of by an overflow and continuous cycle of the MIXED VOLUME and VELOCITY of this cycling volume is controlled in the APPROACH to the vat by carefully engineered tapered hopper and piping systems and the actual entrance to the circle, the formation area, by an arrangement of slice control. The adjustment of the overflow dam also, in part, controls velocity of flow *past* the revolvihg wire mesh forming area. However, with *all* the recognized engineering improvements of this type of vat, the linear foot speed per minute has *not yet reached* 600 feet in regular commercial operation. (Feb. 20, 1950) Making a test run on *one* grade, this speed has been reached but as far as our problem of a standard accepted operating speed is concerned, that is like saying that out of 2000 track men *one* of them can run a mile in 4 minutes 10 seconds. The problem of running speeds comparable to fourdrinier operations in the FORMATION of INDIVIDUAL FIBERS into a continuous sheet of paper has *not yet* been solved. The modern overflow vat will be dealt with later in detail because it is a definite step forward in OPERATING CONTROL. In the meantime, we must remember the counter flow type of vat still predominates in actual number of multiple cylinder machine operations. There are, relatively, very few multiple cylinder type machines running over 525 fpm and most of those are standardized on one or two grades of paperboard. The vast majority of multiple type cylinder machines are running at an average speed of between 300 and 420 feet per minute. Therefore, baffle board arrangement and control is still a daily operating problem for most of us in this line of paperboard making.

For the student serious consideration of baffle board arrangement as a means of control of the VOLUME USED and the VELOCITY of the VOLUME in the approach to the formation circle is a necessity. Who knows, maybe from such study by the younger generation the complete solution of the problem will be arrived at.

This author has selected for discussion three different arrangements of vat delivery in daily use on the same multiple type cylinder board machine. This machine runs at a top speed of 330 fpm when making No. 1 patent white, news back, 0.016 point caliper. The machine trims 108 inches and is operated by a company strictly competitive in the better grades of folding boxboard. This arrangement permits a range of operation between 0.012 and 0.035 without experiencing operating difficulties. *All* stock preparation is carefully and scientifically controlled by the best known modern practice.

PAPER SKETCHES

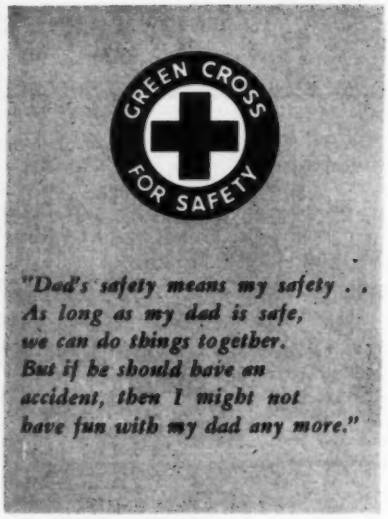
In the late 1500's it was a London fad to paper house and tavern walls with the single sheet, penny "broadsides", issued by Elizabethan news gatherers and ballad publishers.

In mediaeval Germany, apprentice papermakers were obliged by custom to provide a 3-day feast for the guild members before they entered upon their duties as journeymen.

KOREAN papermakers appear to have been the first to practice the art of coloring paper in the vats.

A three inch strip of super-thin Oxford India paper is strong enough to support 25 pounds. This is the paper the Oxford University Press uses in making handsome gift Bibles.

THE UNIVERSAL WISH in these times is for security assurance. Cola Parker, pres. of Kimberly-Clark Corp., brought Safety and Security very close to the lives of all people when he addressed the Pulp and Paper Section at the National Safety Congress


GREEN CROSS
FOR SAFETY
"Dad's safety means my safety . .
As long as my dad is safe,
we can do things together.
But if he should have an
accident, then I might not
have fun with my dad any more."

AN ESSAY ON SAFETY which won a prize for a school boy added a poignant note to Mr. Parker's address

Safety is security-cornerstone . . . keynote of

Congress Highlights

OPENING THE 38th Annual Safety Congress, Ned H. Dearborn, president of the National Safety Council said: "It is not given to many to fashion thought in any area of life—political, economic or social. But each of us can, no matter how inconspicuous he is, no matter how humble his circumstances, contribute in one of the important areas of American strength —the welfare of the individual through accident prevention."

REPRESENTING The Royal Society for the Prevention of Accidents, London, England, Wallace B. Phillips, chairman of its National Executive Committee, addressed the Annual Meeting of the NSC. He covered many aspects of the safety program in Great Britain, and in closing, he said: "The Society maintains a very important industrial safety division dealing with about the same activities as are current here. Although, unfortunately, our Society has not been able to enlist as wholehearted support from industry as you have, nevertheless, we have a number of enthusiastic committees and some 3700 firms who subscribe to our service . . . but I assure you there is just as much enthusiasm and just as much hard and sincere effort put into this movement by many supporters as is the case here."

PARTNER OR POLICEMAN? was the question title of a talk at the Annual Meeting by Miss Marion E. Martin, Commissioner, Department of Labor and Industry, State of Maine. She said: "We are frequently in the middle of the problems, in that we are between labor and management, between management and insurance companies, between safety engineers and plant foremen, between our own inspectors and the plant owners, and last but not least, between the Federal Department of Labor and the plant management. . . . State Departments of Labor or other safety commissions are the *only* agencies that are vested by law with police power. They are, then, or should be, a strong arm in the safety movement."

Spotlighting Pulp and Paper

A ROUNDUP OF the year's activities by General Chairman George W. Harper formally opened the first session of the Pulp and Paper Section's program.

SAFETY AS A CORNERSTONE for personal security was the theme of a keynote address delivered at the first session by Cola G. Parker, president of Kimberly-Clark Corp.

AWARDED ANNUALLY by Fritz Publications, Inc., publisher of The Paper Industry, the Edward Benton Fritz Memorial Trophy, grand prize in the contest was revealed by Mr. Dowd as having been won by the National Container Corp., Kraft Pulp and Board Division, Jacksonville, Florida.

PRESENTATION OF the Grand Prize was made annually by the founder, Edward Benton Fritz, during his lifetime. Since the award was established as a memorial to him eleven years ago, the trophy award has been made by Mrs. Edward Benton Fritz, vice president and treasurer of Fritz Publications, Inc. This year, however, Mrs. Fritz was unable to be present because of an accident. She sent greetings to the Section, and the presentation of the Grand Prize was made by A. Scott Dowd, president of Fritz Publications, Inc. William T. Webster, vice president and general manager of National Container Corp., received the trophy from Mr. Dowd.

▶▶▶ THE ACTIVITIES OF the Pulp and Paper Section of the National Safety Council are summarized each year at the Annual Congress. Each succeeding year, the accomplishments of member mills resulting from their individual accident prevention programs are recorded. Enviable results are reported by some; others realize the need for more intensive work to bring their accident curve down to a low point.

Sound and steady growth has been experienced by the Pulp and Paper Section, but the reports and events of the sessions held during the Annual Safety Congress in Chicago, October 16-20, 1950, proved the past year to have been a period of unusual growth and expansion.

At the opening session, the Section's general chairman, George W. Harper, reviewed the accomplishments of the year. References to work completed were:

(a) Meetings of the Executive Committee

(b) Section of the Paper Products Division to be set up as a sub-committee, known as Insulation Products Committee

(c) Change of name of Paper Products Division to Paper Converting Division with five sub-committees—bag manufacturing, box manufacturing, roofing manufacturing, insulation products, and paper specialities.

(d) Reassignment of officers. New progression changed to—chairman, vice

GEORGE W. HARPER, presiding general chairman, is now teaching safety at University of Illinois

THE GRAND PRIZE, awarded for the 26th time, was won for the first time by a southern mill

C. L. R. DOUGHERTY, newly-elected general chairman, is with Union Bag & Paper Co., Savannah, Ga.

Pulp and Paper Section NSC 38th Congress

PLEASANT INTERLUDE followed meeting of Executive Committee of Pulp and Paper Section. (See following pages for personnel)

LUNCHEON MEETING WAS INFORMAL. At speakers table were (L to R): George W. Harper, retiring general chairman; Arthur Carle, newly-elected secretary and membership chairman; C. L. R. Dougherty, general chairman, elect ,who presided at luncheon; Fred Braun, Employers' Mutual Liability Ins. Co.; and H. B. Goodrich, elected to serve as vice chairman and program chairman for the coming year

chairman, and program chairman, *News Letter* editor, secretary, and membership chairman.

General Chairman Harper referred to the Membership Committee's report which showed eleven new members admitted to the Section, making the present total 284.

The work of each committee was mentioned, and the various aids given by the National Safety Council were acknowledged. Particular emphasis was given to the fine work and assistance given the Section by Staff Representative Pete Marconi.

Safety . . . a cornerstone of security

The word "security" is a much used and often abused word. But throughout the stirring address on this subject delivered at the first session by Cola G. Parker, president of Kimberly-Clark Corp., ran the thought that safety is a cornerstone of our *personal* security, putting the responsibility on a purely individual basis. Hanging out a figurative sign in the very beginning, "Help Wanted . . . for Safety," Mr. Parker's entire address was packed with facts, figures, and illustrations that were informative, illuminative and convincing.

The audience hung on the speaker's every word as he said:

"There is nothing wrong with the desire for security in its various facets. We all want it—safety of person, safety of property, assurance of a living, independence in old age, education for ourselves and our children, and our fair share of the other good things of life, and certainly safety of our country. . . ."

"Quite obviously, national security is a governmental matter. It is a government obligation—one of the purposes for which, as the Declaration of Independence puts it, 'governments are instituted among men—deriving their just powers from the governed.' To that purpose we all must and should contribute. . . ."

"Let us look at the very first foundation of security, safety of person, or as I put it, *Safety, a Cornerstone of Security*. We are all concerned with that—individually and collectively. We call for help to make our plants safer, to keep before us all the ideals of safety, to help us emulate the group of 89 who worked together for 29 years without a lost-time accident. (Cf. *Industrial Supervisor*) . . ."

"When we strip the situation of all its obscuring features, who is responsible for safety? Why do we have safety programs, safety rallies, safety bulletins, safety speakers? All of those questions and others have but one simple answer: Safety is a matter of the individual. . . . He—we—must be constantly reminded that the only safety we have and can control stems from our own safe practices. To put it baldly—*it is an individual responsibility*. . . . Every security there may ever be is first predicated on personal physical safety—*and that rests finally upon our own individual determination to be safe.*"

Probably the climax of Mr. Parker's address, the one thought that went home with every listener, was the illustration of a prize-winning essay written by a youngster on the subject "What dad's safety means to me." It was short, but in a few words it spread over the one great interest in a young boy's life.

"The first thought that came to my mind was that dad's safety means happiness instead of sorrow. As long as my dad is safe, I know I can go to school every day and give my whole attention to my studies. After school, I can take part in athletics or other events. That gives me a chance to build up my body as well as my mind.

"Dad's safety means my safety. What dad has learned about safety he can teach me by telling me and also by example. As long as my dad is safe, we can do things together. But if he should have an accident, then I might not have fun with my dad any more."

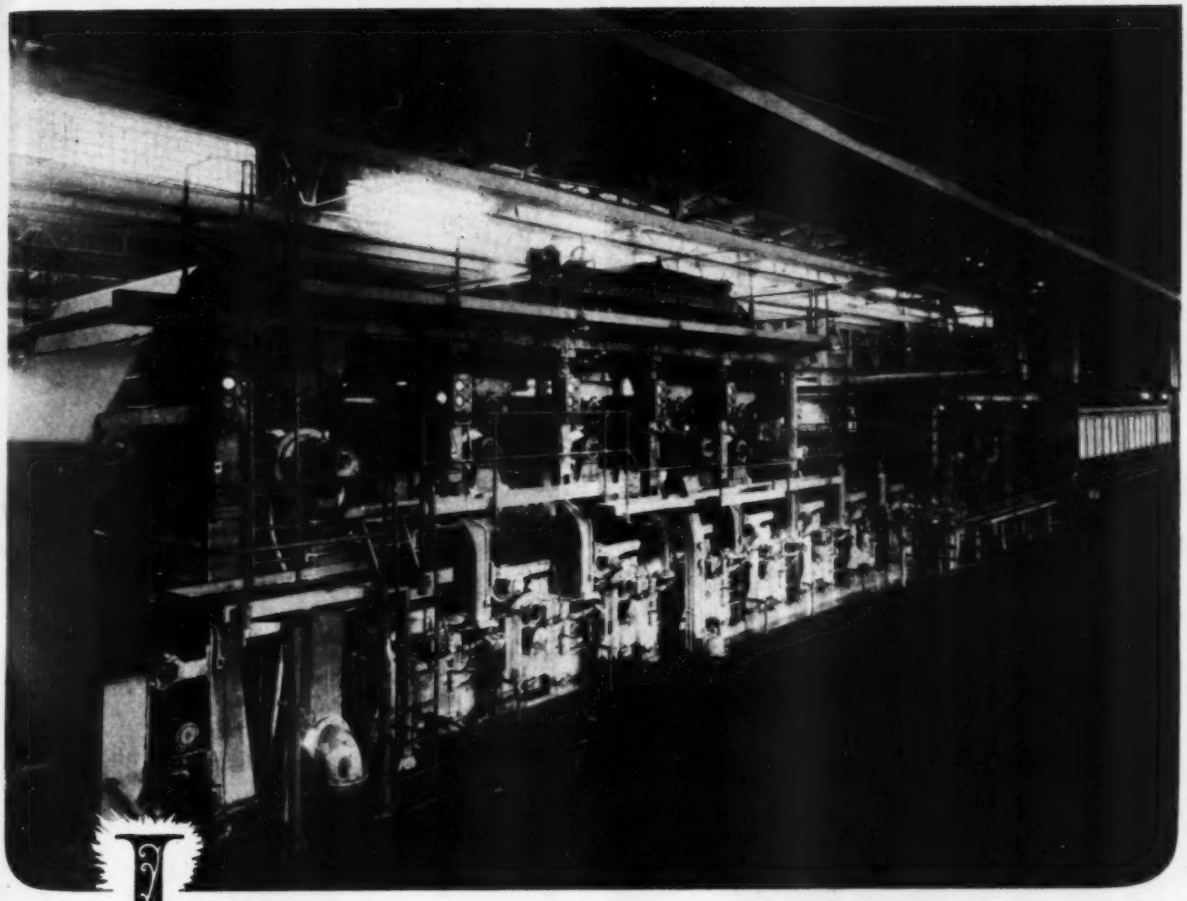
Luncheon meeting was entertaining

No special events or addresses had been scheduled for the luncheon get-together on Thursday. This affair was something of an innovation, the time being spent in relaxation, good food, and good fellowship. With newly-elected General Chairman Dougherty acting as Emcee, there was a continuous flow of spontaneity and good humor. A Wisconsin delegate carried off the pot of gold (a dime apiece); there were consolation prizes and introductions. It was voted a most enjoyable occasion.

Three addresses and a safety film

Three fine addresses and a special film in technicolor featured the program of the Section on the second afternoon. The newly-elected General Chairman C. L. R. Dougherty presided.

G. J. Bienvenu—Speaking on the subject "Safety as practiced in the container plant," the speaker outlined in detail



In the Black-Clawson tradition

Down the decades the most modern and most successful board machines have been those bearing the Black-Clawson name-plate. The 8-cylinder machine here shown carries on that enviable Black-Clawson tradition.

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PAPER MANUFACTURING round table drew a very large attendance. D. B. Chant presided; Arthur Carle was conference expert

PULPWOOD LOGGING held its forum jointly with Wood Products Section. Standing, is Fred T. Morrish, who presided

SULPHITE PULP round table session was well attended. Julius Draper presided at this forum

INSULATION PRODUCTS, a new division this year, had an interesting first forum. R. M. Bailey (center) presided

SULPHATE PULP round table discussion was presided over by Dayton V. Hill (right). Howard Kroll (left) was expert

PAPER CONVERTING session was presided over by W. H. McLaughlin (left). W. D. McGuinness (right) acted as expert

the safety program in operation at the Gaylord Container Corp., Bogalusa, La., where he is general superintendent of the Container Division. All of the main points, including also many small things that are sometimes overlooked in a safety program, were covered. Mr. Bienvenu said: "Remember that the big job is to educate the worker to mentally safeguard himself at all times. Men must be sold safety not annually or semi-annually, not even periodically—but 60 minutes of every hour.

Dwight J. Thomson—In keeping with the season, a football was tossed into the meeting by Mr. Thomson, vice president and director of industrial and public relations for the Champion Paper and Fibre Co., Hamilton, Ohio. He told the group that a successful safety program could be likened to the development of a winning gridiron team.

"The prevention of accidents," he said, "must be considered on a strictly personal basis. It requires that everyone work together to obtain the best results. Consider for a moment the evolution of a good football team. Here the players are first taught the general principles of football, and secondly, each individual player is taught exactly what he is to do and why it is important that he execute his functions as perfectly as possible. Similarly, the basic principles of accident prevention should be taught by the supervisor to his group of workers."

Mr. Thomson's address was illustrated with slides that revealed many hazards in a paper mill. (*Watch for abridgment of his paper in an early issue of this magazine.*) Assisting Mr. Thomson with the slides was Kenneth Faist, co-ordinator of employment and safety for Champion, and a past general chairman of the Pulp and Paper Section.

R. W. Laughlin—Demonstrating his talk with a unique kit of tools, Mr. Laughlin, resident engineer of the Liberty Mutual Insurance Co., Portland, Maine, told the Section how a fall may be avoided. He said that a person standing correctly—with the feet about 1½ inches apart and the toes slightly turned out—is on a square base and better able to avert a possible fall. He stressed balance and motion, and stated that "the number of accidents due to slips and falls and handling materials will be reduced at least 50 per cent, if foremen will train their employees in human balance and motion."

American Pulpwood Association — A technicolor film showing safe practice in woods operation was presented for the Association by H. H. Jefferson, training officer. This part of the program was both entertaining and helpful. The original film was distributed by the Brown Co., Berlin, N.H.

THREE SPEAKERS on the program of the second afternoon contributed a wealth of safety information, and drew many questions of general interest.

Shown speaking is G. J. Bienvenu, Gaylord Container Corp., who spoke on safety practices in a container plant. Seated (left) is R. W. Laughlin, of Liberty Mutual Ins. Co., Portland, Maine, who covered the psychological aspects of Safety training; and Dwight J. Thomson, The Champion Paper & Fibre Co. Mr. Thomson's talk was based on "just horse sense," and slides were used to illustrate many of his points

Six Round Table Discussions

Programs of the last two afternoons were devoted entirely to round table discussions; three of these were held simultaneously on each day. In these informal, unrehearsed meetings, probably more problems are presented and questions answered than in any other kind of program. The sessions held, presiding directors, and conference experts of each are listed:

Sulphite Pulp Manufacturing—Julius A. Draper, presiding; George H. Pearce, conference expert.

Sulphate Pulp Manufacturing — Dayton V. Hill, presiding; Howard J. Kroll, conference expert.

Paper Converting—W. H. McLaughlin, presiding; W. D. McGuinness, conference expert.

Paper Manufacturing—D. B. Chant, presiding; Arthur Carle, conference expert.

Pulpwood Logging (Co-operating with Wood Products Section—A Joint Meeting)—Fred T. Morrish, presiding; Barney H. Roy, conference expert.

Insulation Products—R. M. Bailey, presiding; B. J. Lee, conference expert.

When the proceedings of these round table sessions have been compiled, this magazine hopes to present some of the questions and discussions in a future issue.

Contest Data

The following report, summarizing the results of the 1949 Paper Industry Safety Contest, was read at the opening session of the Pulp and Paper Section by A. Scott Dowd, chairman of the Contest Committee:

Before the period of our Contest was changed in 1949 to coincide with the calendar year, experiences remained quite vivid from the time they terminated on June 30 to the date of our Congress in October. The longer lapse in time since December 31 requires that our recollections penetrate through experiences of an intervening nine months.

Copies of the Final Bulletin of the 1949 Contest for the period, January 1 to December 31, were sent to the members of the Pulp and Paper Section last February. Trophies and certificates, awarded by the National Safety Council to group winners, were shipped shortly afterwards, and many of the members arranged ceremonies for their formal presentations, designed to instill among employees the importance of their achievements and of continuing their good work in safety.

Summarizing the facts of the 1949 Contest, there were 251 pulp and paper mill units and 100 converting plants—a total of 351 participants. In addition, there were five participants with below-minimum exposure and consequently unqualified for final ranking. The total number of man-hours reported was close to 390,000,000—an increase of about 10,000,000 over the previous contest of July 1, 1948, to June 30, 1949. Disabling injuries, on the other hand, were reduced to about 3900, as compared with 4300 in the previous contest.

The cumulative frequency rate for all contestants dropped to 10.02 from 11.27 in the previous contest—a reduction of 9 per cent. The cumulative rate of identical contestants dropped 12 per cent from that of the previous contest. The cumulative rate, 10.02, for all contestants was 34 per cent below the national average of 15.15 for all companies in the paper industry that reported their experience to the National Safety Council in 1948. One hundred seventy-eight contestants, approximately 50 per cent of all participants, had frequency rates below 10. Thirty-three units, made up of 19 mills and 14 converting plants, completed the Contest with perfect scores.

Aside from the group winners, 94 plants had frequency rates below their group averages and showed reductions in rate by comparison with those made in the previous contest.

Following are a few of the plants that made top outstanding reductions in their rate of the preceding contest:

	Per cent
Division One—	
Price Bros. & Co., Riverbend, Que.	74
Consolidated Paper Corp., Ltd. (Belgo Div.)	64
Container Corp. of America, Circleville, O.	65
Kimberly-Clark Corp. (Kimberly, Wis.)	64
The Ruberoid Co., Gloucester City, N.J.	64
Division Two—	
Container Corp. of America Los Angeles, Calif.	80
Rock Island, Ill.	74
The Hankins Container Co. (Union, N.J.)	70

The following plants received trophies for perfect scores, or Rank No. 1, in their respective groups. Certificates were awarded for second and third ranks:

Division I—Paper and Pulp Mills

Group A

1—Brown Corp., LaTuque, Can.—Freq. rate .98
2—Kimberly-Clark Corp. (Lakeview Mill), Neenah, Wis.—Freq. rate 1.29
3—Champion Paper & Fibre Co., Hamilton, Ohio—Freq. rate 1.57

Group B

1—National Container Co. (Kraft Pulp Division), Jacksonville, Fla.
1—West Virginia Pulp & Paper Co., Williamsburg, Pa.
3—Thilmany Pulp & Paper Co. (Upper Mill), Kaukauna, Wis.—Freq. rate .72

Group C

1—Marathon Corp., Menominee, Mich.
1—National Vulcanized Fibre Co., Yorklyn, Del.
1—Price Brothers Co. Ltd., Jonquiere, P. Q., Canada
1—Congoleum-Nairn, Inc., Cedarhurst, Md.
1—National Vulcanized Fiber Co., Newark, Del.
(As there are more than three perfect scores in this group, there are no second and third ranks.)

Group D

1—Mead Corp., Harriman, Tenn.
1—Container Corp. of America, Carthage, Ind.
1—Mead Corp. (Wheelwright Div.), North Leominster, Mass.
1—U. S. Gypsum Co., Oakmont, Pa.
1—Marathon Corp., Ashland, Wis.
1—Armstrong Cork Co., Pensacola, Fla.
1—Strathmore Paper Co. (Mill No. 1), Woronoco, Mass.
1—Ward Paper Co., Merrill, Wis.
1—Hollingsworth-Whitney Co., Madison, Me.
1—National Gypsum Co., Newburgh, N. Y.
1—Riegel Paper Corp., Riegelsville, N. J.
1—Spaulding Fibre Co. (Hayes Plant), No. Rochester, N. H.

Division II—Converting

Group A

1—Lily Tulip Cup Corp., College Pt., N. Y.—Freq. rate 1.49
2—Flintkote Co., Chicago Hts., Ill.—Freq. rate 4.26
3—Behr-Manning Corp., Troy, N. Y.—Freq. rate 4.93

Group B

1—National Container Corp. (Container Div.), Jacksonville, Fla.
1—Marinette Paper Co., So. Glens Falls, N. Y.
3—Old Colony Env. Co., Westfield, Mass.—Freq. rate 1.67

Group C

1—Fibreboard Products, Inc., South Gate, Calif.
1—Container Corp. of America, Baltimore, Md.
1—Bird & Son, Inc., Shreveport, La.
1—Kimberly-Clark Corp., Appleton, Wis.
1—South West Box Co., Sand Springs, Okla.
1—Certain-teed Products Corp., Kansas City, Mo.
1—Pillsbury Mills, Inc., Wellsburgh, West Va.
1—Thilmany Pulp & Paper Co., Kaukauna, Wis.
1—Certain-teed Products Corp., Buffalo, N. Y.
1—Flintkote Co., Hollywood, Calif.
1—Bay West Paper Co., Green Bay, Wis.
1—Lloyd A. Fry Roofing Co., San Leandro, Calif.

The outstanding achievement in this group and the entire converting division, is that of Bay West Paper Co., Green Bay, Wis., which has received 12 successive annual trophies, having operated without a lost-time accident since June, 1937. We congratulate them again on their fine, exemplary work in safety.

As we are nearing the end of the 1950 Contest, some facts covering its first eight months are interesting to observe at this time.

There are 277 pulp and paper mill units and 126 converting plants—a total of 403 participants enrolled in the Contest. Four of these are unqualified for ranking, as their exposures are below minimum.

The average cumulative frequency rate for all contestants was 9.96, as compared with 10.39 for the same period last year, and 10.02 for the entire year. There was a drop of 2 per cent in the cumulative rate of identical contestants.

Six of those that had perfect scores in Division One of the 1949 Contest have retained perfect scores to September 1, 1950. Seven of those in Division Two have likewise retained perfect scores.

Winner of Major Prize

Selecting a winner of the Grand Prize for the best safety achievement among the 251 paper and pulp mill contestants, 19 of which had perfect scores, was a big task for the Contest judges. In the opinions of these five judges, there were seven outstanding cases, three of which led all the rest.

In accordance with our Rules, the mill that receives a majority vote of the judges, is awarded the Edward Benton Fritz Memorial Trophy. *The winner of this Grand Prize in the 1949 Contest is the Kraft Pulp and Board Division of National Container Corporation, Jacksonville, Florida.*

Some brief highlights of this company's record, and those of a few others will be related for ideas and encouragement they might offer to others.

Case History "A"

The Kraft Pulp and Board Division of *National Container Corporation*, Jacksonville, Florida, reached its top and crowning achievement of a perfect score in 1949, with 531 employees, operating 1,115,426 manhours. It is a completely integrated mill having a daily capacity of 370 tons of sulphate pulp and 350 tons of kraft liner and corrugating material.

Their achievement was the zenith of five years progressive experience, and the reward of a well-organized safety program which leans heavily on labor-management teamwork. The General Safety Committee, composed of workers and supervisors, maintains a constant check on all accidents, initiates new ideas, and keeps a watchful eye on the whole plant.

In addition to the General Safety Committee, each department and shift holds periodic meetings to discuss hazards, make recommendations for better housekeeping, and to review the safety program. These workers elect their own chairman and committeemen to act as safety observers.

An extensive promotional program is carried out through the use of posters, actual accident photographs, contests, inter-plant competition, etc.

A large share of credit for the success of their program has been given to the supervisors.

The Company's Southern Container Division, which also is located in Jacksonville, has likewise topped the list of contestants in Group B of the Converter Division. Each Division has, therefore, received a trophy for its perfect record in 1949.

Case History "B"

The Williamsburg, Pennsylvania, plant of *West Virginia Pulp & Paper Company* has matched the accomplishment made in the previous contest of its sister plant at Tyrone, with the better record of a Perfect Score.

The safety record of the Williamsburg employees was achieved in a completely self-contained pulp and paper mill, during a year of full and uninterrupted operations. The mill has a rated capacity of 70 tons of pulp and 80 tons of paper. During the year, the plant employed an average of 490 employees, 93 per cent of whom were engaged in production and maintenance jobs.

The plant has had an organized safety program for more than 18 years. During the war, an expanded safety program enabled it to cope successfully with the trying safety problem of that period. The program regressed immediately after this, however, when full production schedules, combined with an abnormally large force, sent the frequency rate upward. In 1946, the

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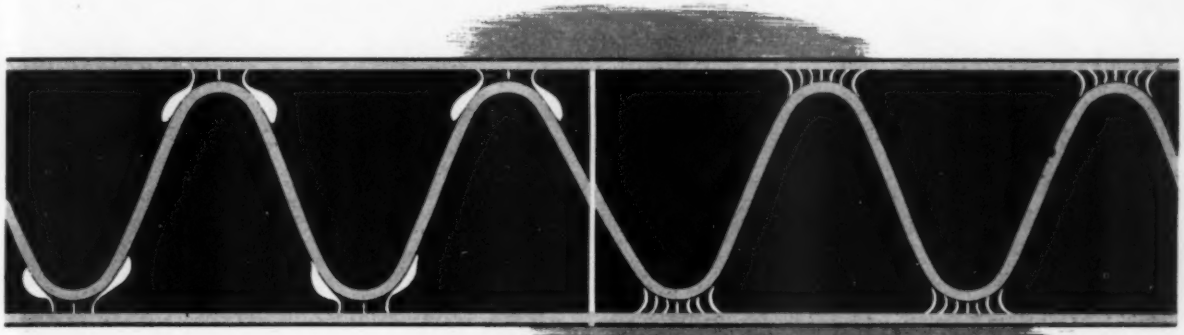

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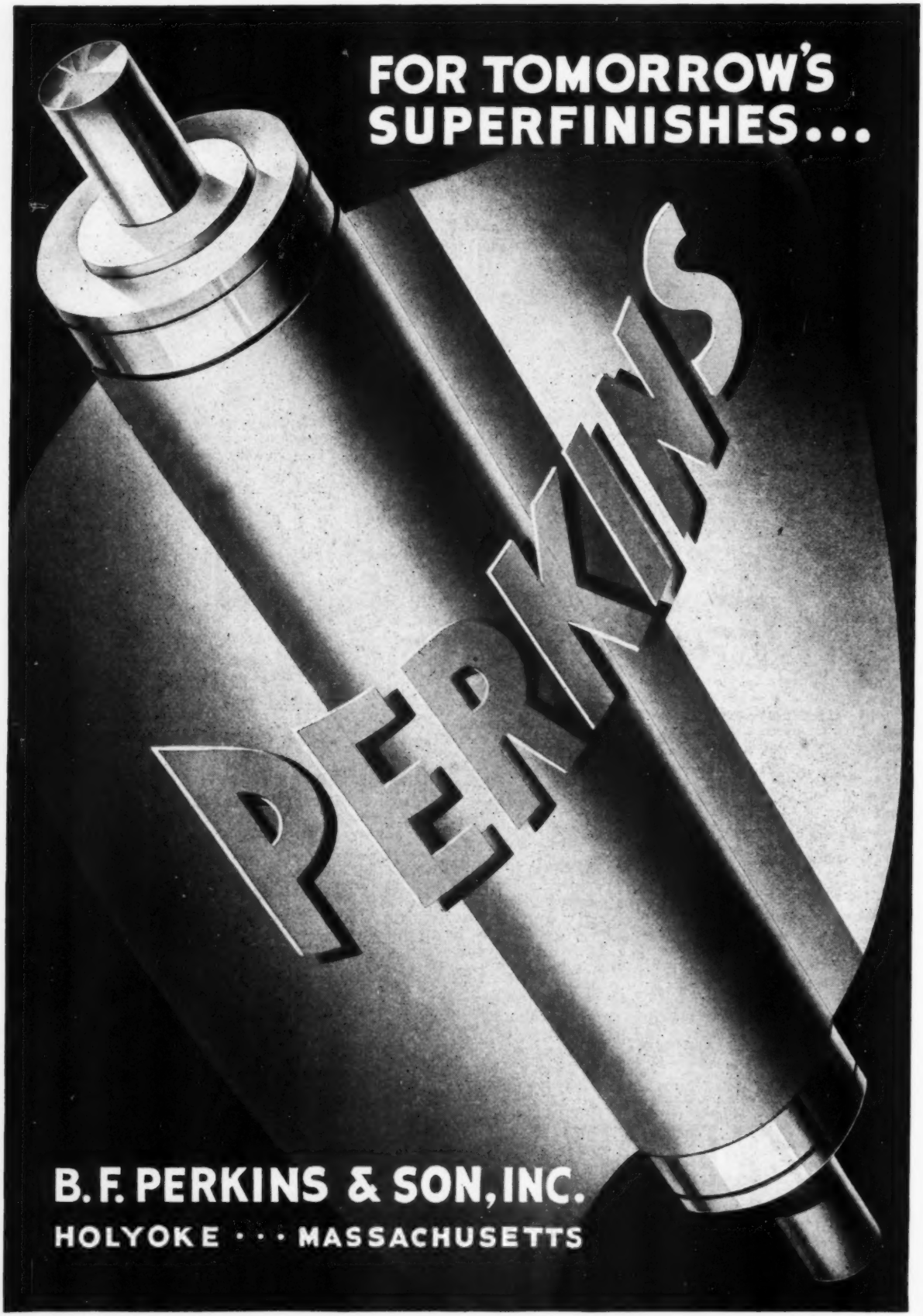
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frequency rate was 16.048, and in 1947, it advanced to 17.683. The safety program was then completely reorganized and expanded. The initial effect of this was seen in 1948, when the frequency rate was reduced to 13.416.

The greatest advance came late in 1948, when a specific method of accident control was introduced. Under this plan the mill began, for the first time, to classify accidents by unsafe acts and conditions, which enabled the committee to concentrate its accident prevention efforts in areas of recurrent causes. This new phase of the program brought about tremendous improvement. It culminated in the experience of 1949, when the mill came through with an exposure of 1,015,398 man-hours without a single lost-time accident. For this perfect record, the mill has been awarded a trophy. The Contest judges gave this mill its *Honorable Mention*, and *second place* in their election of the winner.

Case History "C"

Armstrong Cork Company, Pensacola, Florida, manufacturers of insulating fiberboard, operated during all of 1949 without a lost-time accident. They started this unbroken record on June 18, 1947, and operated safely more than a million manhours to the time their report was made early this year.

Their safety program started in 1948 when each of their foremen took, first, the standard Red Cross Aid Course, and the periodic refresher courses which followed.

Their Safety Committee, which makes periodic inspections of the entire plants, is composed of two hourly men, one representative from the Management Association, and the Safety Supervisor. Detailed reports of their findings are sent to the Plant Manager and the various department heads. Then the Plant Management Association, a group composed of staff members and supervisory personnel, meets to discuss the report and to plan for the correction of any accident hazards that have been discovered during the inspection. Information gained at these meetings is carried back to the men in the plant, and by this method, everyone is kept safety-minded.

Included in the agenda of their regular safety program, every supervisor talks to each of his employees once every month relative to safety. The supervisor keeps a record of all first aid cases and a follow-up on *all injuries* to determine whether the injured person should have medical attention. His report on each injury is forwarded to the Personnel Department. Certificates of Merit are awarded by the Company for achieving the Armstrong safety standard. These are posted in each department monthly.

The Pensacola Plant has ranked first for the past four years among the Company's eight smaller plants in the Second Division, based on the frequency rates of these plants, for which it was awarded a bronze plaque given by the Company. For their perfect score in Group D of our 1949 Contest, they have been awarded the National Safety Council Group Trophy. The Contest judges gave this mill also its *Honorable Mention*, and *third place* in their election of the winner.

Company President Cola G. Parker entertained Kimberly-Clark Corp. representatives at luncheon during the Annual Safety Congress held in Chicago

Kimberly-Clark Sends Delegation to Safety Congress

A group of 31 men was sent to represent Kimberly-Clark Corp. at the Annual Safety Congress held in Chicago last month. These men comprised both hourly and salaried workers representing 27 different job assignments from all Kimberly-Clark and its affiliated activities. The company feels that the safety director is not necessarily the only worker to represent a mill.

These men who attend the Congress agree to: (1) Make a sincere effort to investigate one new idea which can be used to prevent accidents at his mill, and (2) Outline highlights of his trip to fellow employees.

The Pensacola Plant also received awards in 1948 and 1949 from the Southern Pulp and Paper Safety Association in recognition of their outstanding safety record achieved in competition with other paper mills in that association.

Case History "D"

One of the main reasons for top-bracket safety achievements in mills of *The Mead Corporation* is the co-operation which exists between the employees and management, and the enthusiasm and interest of employees and supervisors. Six of their eight plants that participated in the 1949 Contest operated for the year with accident frequencies below 6, and two of these completed the year without accidents.

These two mills are the *Harriman Division* at Harriman, Tennessee, and the *Wheelwright Division* at North Leominster, Massachusetts.

The former makes semi-chemical pulp and manufactures it into chestnut paperboard for corrugating. The plant employs 185 persons. The latter makes Bristol, Blanks, Board and Board Specialties. An average of 175 persons are employed.

The primary purpose of Mead's safety program is humanitarian, for both management and employees realize that a monetary value cannot be placed on a person's life, as it can be with machinery, equipment and materials.

As representatives of management, the supervisors are directly responsible for putting into effect the principles of safety. The foreman is held directly responsible (not to be confused with blame) to management for injuries which occur to his employees.

Their safety program is divided into four phases: (1) Training, (2) Engineering, (3) Promotion, and (4) Enforcement.

The George H. Mead Accident Prevention Trophy is a traveling trophy, awarded each year to the plant in The Mead Corporation which has the lowest accident frequency rate. The division which wins this trophy three times (need not be consecutive) will be awarded permanent possession. The Harriman Division won the trophy for 1949 with a perfect score of no accidents. In recognition of the perfect scores made by both the *Harriman* and *Wheelwright* divisions, each has received the National Safety Council trophy for their achievements in Group D of the 1949 Contest.

Case History "E"

Brown Corporation, LaTuque, Quebec, largest sulphate pulp mill in Canada, employing 800 people, found itself severely restricted in the selection of manpower following the outbreak of the Second World War in 1939. The situation brought about a rapid increase in the number of accidents. Management then decided, early in 1942, to intensify efforts toward prevention of accidents through the implementation of a more extensive accident prevention program. With the help of the National Safety Council, they concentrated for some time on two points: (1) "Analyze Accident Records" and (2) "Mechanical Guarding." They found that four departments out of 26 were sustaining 85 per cent of all the accidents.

In 1944, a training program was started for salaried supervisors and later, the hourly-

paid foremen. The course was given in English and in French to a total of 340 men.

In 1949, the course on "Job Relations Training" No. 1, was given to 110 supervisors and foremen.

Over the period, 1942 to 1949, various types of safety propaganda were used. When it was felt that supervisors were sufficiently safety conscious, and could take over part of the safety program, a new approach was initiated. Each supervisor was required to contact e ery member of his crew at least once a month, regarding safety, working conditions, etc. A "Supervisors Safety Inspection Check List" was developed and simplified to facilitate its use by both English and French speaking supervisors, when checking conditions in their respective departments each month.

Safety consciousness among employees was accomplished with a minimum of recourse to safety rules. Disciplinary measures were never used—simply personal contacts, education, explanations and lots of persuasion.

Accidents declined steadily year after year from a high record in 1942 of 99 accidents —exposure 2,298,095 man-hours—frequency 43.1, to the record in 1949 of 2 accidents—exposure 2,036,159 man-hours—frequency .98. As top ranking contestant in Group A of Division One, the mill has been awarded a trophy for its excellent record.

Grand Prize Awarded

At this point, Mr. Dowd explained to the audience the absence of Mrs. Edward Benton Fritz, vice president and treasurer of Fritz Publications, Inc. Mrs. Fritz has awarded the Grand Prize each year at the Congress since it was established as a memorial to Mr. Fritz following his death eleven years ago. This year Mrs. Fritz was unable to be present due to an accident. Her personal greeting to the Section was read by Mr. Dowd, and he then acted for her in presenting the Memorial Trophy to William T. Webster, vice president and general manager of National Container Corp., Jacksonville, Fla.

Executive Committee Pulp and Paper Section

The following new officers and committees were elected to serve for the year 1950-1951:

Officers

General Chairman—C. L. R. Dougherty, assistant manager, Industrial Relations, Union Bag and Paper Corp., Savannah, Ga.

Vice Chairman and Program Chairman—H. B. Goodrich, maintenance and safety engineer, Strathmore Paper Co., West Springfield, Mass.

News Letter Editor—A. E. Minor, safety supervisor, The Ontario-Minnesota Pulp and Paper Co., Ltd., Kenora, Ontario, Can.

Secretary and Membership Chairman —Arthur Carle, safety director, The Northwest Paper Co., Cloquet, Minn.

Medical Advisor—Dr. James D. Stark, medical director, Hammermill Paper Co., Erie, Pa.

Regional Membership Representatives: East—H. B. Heubner, The Flintkote Co., New York, N.Y.; South—C. C. MacPike, safety director, St. Regis Paper Co., Pensacola, Fla.; Great Lakes—E. V. Johnson, safety supervisor, The Kimberly-Clark Corp., Neenah, Wis.; West —Ernest Dutcher, safety engineer, Owen McMahon, acting safety engineer, Pioneer Div., The Flintkote Co., Los Angeles, Cal.; Canada—Douglas B. Chant, secretary-engineer, Ontario Pulp and Paper Makers' Safety Association, Toronto, Ontario, Canada.

Committees

Contest Committee — A. Scott Dowd (Chairman), president, Fritz Publications, Inc., Chicago, Ill.; J. Fred Berry, personnel manager, Alton Box Board Co., Alton, Ill.; W. R. Cahill, director, personnel administration department, Nekoosa-Edwards Paper Co., Port Edwards, Wis.

Statistical Committee — Gordon Lemke (Chairman), safety engineer, Employers' Mutual Liability Insurance Co., Wausau, Wis.; Francis H. Wagner, director of safety, Mead Corp., Chillicothe, Ohio; R. W. Croucher, safety officer, Minnesota and Ontario Paper Co., International Falls, Minn.; Lambert Louey, safety director, Container Corp., Chicago, Ill.; George Merriman, coordinator of personnel, International Paper Co., Mobile, Ala.

Pulpwood Logging Division

Fred T. Morrish (Division Chairman), safety supervisor, The Ontario-Minnesota Pulp and Paper Co., Ltd., Fort Frances, Ontario, Canada.

Publications Committee — Seth Jackson (Chairman), safety officer, U. S. Forest Service, Washington, D. C.; Leland W. Hooker, timber technologist, Forest Products Research Div., Michigan College of Mining & Technology, Houghton, Mich.; John E. Schueler, Consolidated Water Power & Paper Co., Rhinelander, Wis.; John Mader, safety engineer, Employers' Mutual Liability Insurance Co. of Wisconsin, Ironwood, Mich.

Visual Aids Committee—Harry H. Jefferson (Chairman), training officer, American Pulpwood Association, New York, N.Y.; Earl M. Bruce, safety engineer, Great Northern Paper Co., Millinocket, Me.; J. C. Rodgerson, safety director, Brown Co., Berlin, N.H.

Pulp Manufacturing Division

Julius A. Draper (Division Chairman), director of safety, Consolidated Paper Corp., Ltd., Grand'Mere, P.Q., Canada.

Publications Committee — D. V. Hill (Chairman), safety director, The Mead Corp., Kingsport, Tenn.; R. Chapman, chairman, mill accident prevention committee, Howard Smith Paper Mills, Ltd., Cornwall, Ontario, Canada; A. S. Cook, manager, Quebec Pulp and Paper Safety Association, Quebec, P.Q., Canada; Cyril D. McCan, assistant safety engineer, Crossett Paper Mills, Crossett, Ark.

Visual Aids Committee—Elmo B. Stevens (Chairman), manager of personnel, Hollingsworth and Whitney Co., Waterville, Me.; John J. Long, director of plant and personnel protection, West Virginia Pulp and Paper Co., Luke, Md.; George S. Nelson, claims and safety manager, Consolidated Water Power and Paper Co., Wisconsin Rapids, Wis.; George Pearce, safety officer, Bathurst Power & Paper Co., Ltd., Bathurst, New Brunswick; F. O. Soughton, service & safety supervisor, LongLac Pulp & Paper Co., Ltd., Terrace Bay, Ontario, Can.

Paper Manufacturing Division

Dallas E. Henry (Division Chairman), safety co-ordinator, Southern Advance Bag and Paper Co., Inc., Hodge, La.

Publications Committee—E. B. Lambton (Chairman), safety engineer, St. Regis Paper Co., New York, N.Y.; C. C. Coughlin, safety director, Gulf States Paper Corp., Tuscaloosa, Ala.; L. J. Crichton, safety director, Camp Mfg. Co., Franklin, Va.; Charles Mason, personnel manager, Southern Paperboard Corp., Savannah, Ga.

Visual Aids Committee—James N. Conaway (Chairman), safety director, Scott Paper Co., Chester, Pa.; Howard H. Dyke, safety and personnel, International Paper Co., Glens Falls, N.Y.; Frank Eisenhauer, safety director, Bird and Son, Inc., East Walpole, Mass.; G. Russell Leonhard, director of safety, Paterson Parchment Paper Co., Bristol, Pa.

Paper Converting Division

W. D. McGuinness (Division Chairman), assistant insurance manager, The Flintkote Co., New York, N.Y.

Bag Manufacturing Committee — Robert W. Gray (Chairman), safety director, Union Bag and Paper Corp., Savannah, Ga.; R. G. Belknap, safety inspector, Bemis Bro. Bag Co., St. Louis, Mo.; Harold Glahe, director of educational programs and safety, Bag Division, St. Regis Paper Co., Oswego, N.Y.

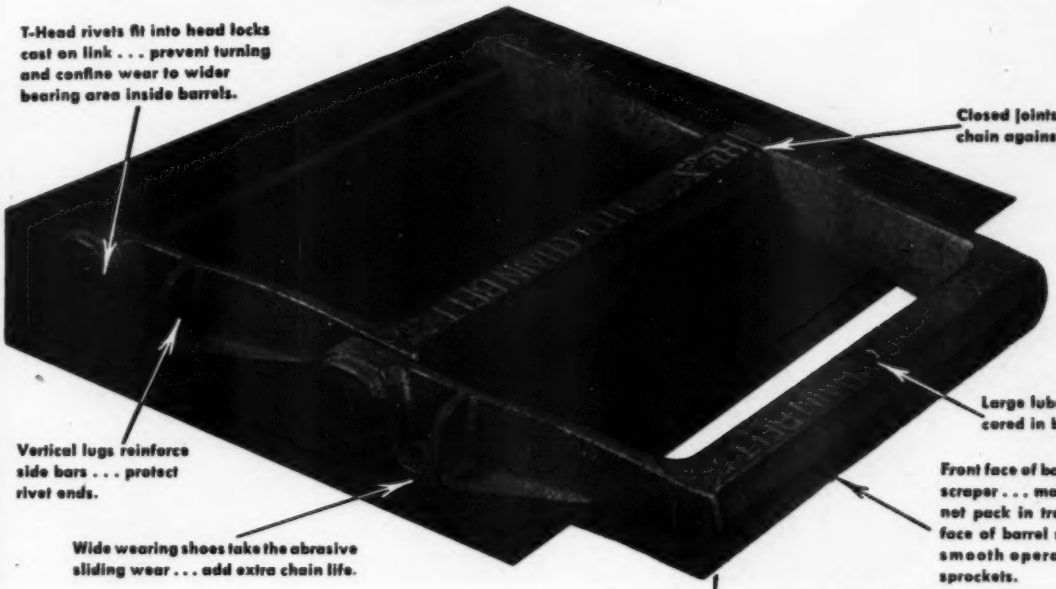
Box Manufacturing Committee — A. O. Vranek (Chairman), Container Corp. of America, Chicago, Ill.; G. J. Bienvenu, general superintendent, Gaylord Container Corp., Container Div., Bogalusa, La.; Grant Shibley, safety engineer, Ohio Box Board Co., Rittman, O.

Roofing Manufacturing Committee—Hugh Jackson (Chairman), manager of safety and training, The Johns-Manville Corp., New York, N.Y.; Paul B. McInerney, insurance and safety manager, Lloyd A. Fry Roofing Co., Summit, Ill.; Frederick A. Schulze, director of Industrial Relations, The Ruberoid Co., Joliet, Ill.

Insulation Manufacturing Committee — Gordon Allen (Chairman), personnel manager, Wood Conversion Co., Cloquet, Minn.; Amos S. Keen, safety director, Armstrong Cork Co., Lancaster, Pa.; W. E. Blackledge, safety supervisor, Masonite Corp., Laurel, Miss.; C. R. Johnson, personnel director, Cornell Wood Products Co., Cornell, Wis.

Specialties Manufacturing Committee — W. H. McLaughlin (Chairman), director of safety and sanitation, Lily-Tulip Cup Corp., College Point, L.I., N.Y.; Vincent P. Coulon, safety director, The Sealright Co., Inc., Fulton, N.Y.; W. L. Lauer, safety chairman, Dixie Cup Co., Eastman, Pa.

SLASH YOUR REFUSE HANDLING COSTS WITH REX H-TYPE CONVEYOR CHAINS


T-Head rivets fit into head locks cast on link . . . prevent turning and confine wear to wider bearing area inside barrels.
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With Rex H-Type Conveyor Chains, you get the cost-cutting advantage of large capacity and even loading at low speed. Their great width permits them to handle bigger loads at lower speeds, thus reducing the abrasive wear on the chains and assuring long, economical service.

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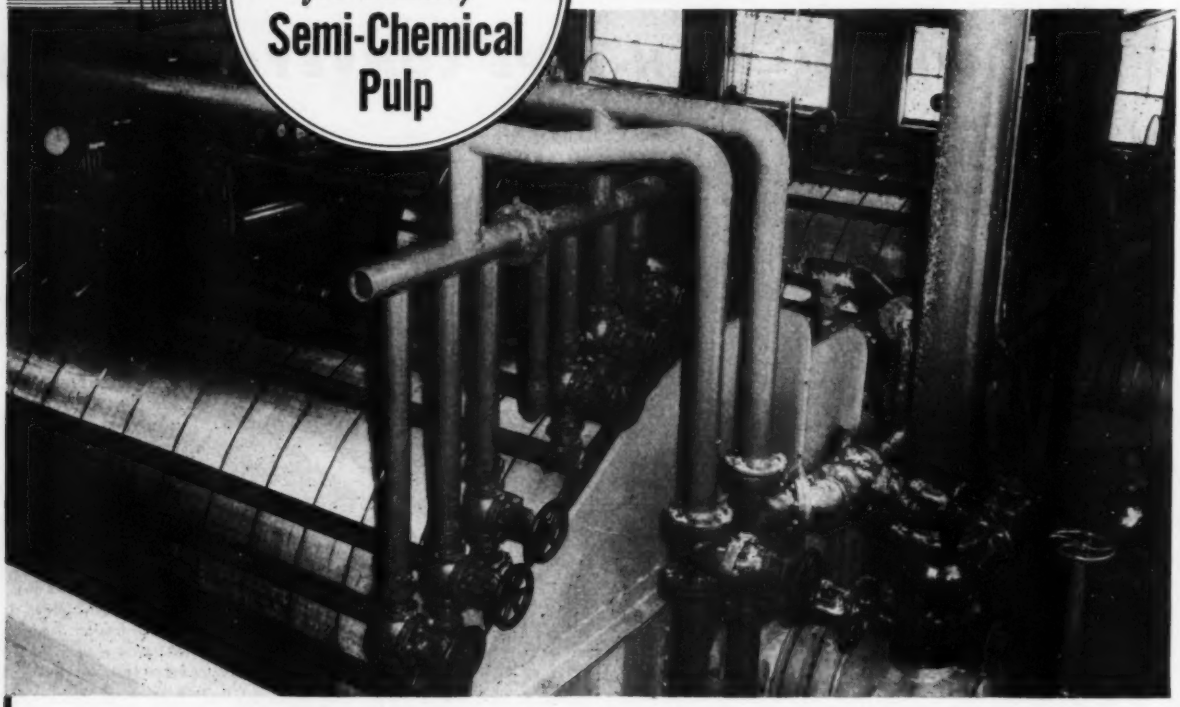

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The Paper Industry Association News

TAPPI DELEGATES to the Fifth Engineering Conference held in Cincinnati, October 2-5 went on a tour through the Armco Steel Corp. plant at Middletown, Ohio. They observed the production of flat rolled steel from open hearth to shipping, stainless operation, and Armco's revolutionary method of zinc coating steel

Cincinnati Meeting Place of Fifth TAPPI Engineering Conference

▶▶▶ THE FIFTH Annual TAPPI Engineering Conference of the Pulp and Paper Industry met at the Netherland Plaza hotel in Cincinnati, Ohio, October 2-5. Approximately 400 TAPPI members were in attendance for session on Mill Design and Economic Aspects. Hydraulics, Engineering Research and Machine Design, Material Handling, Mill Maintenance and Materials, Data Sheets, Drying and Ventilating, Chemical Engineering, Steam and Power, and Electrical Engineering. Committees concerned with these subjects met at luncheons on October 2nd as well as in round table discussions on October 3rd and 4th.

The annual Allied Industries Dinner held October 3 at the Netherland Plaza was preceded by a reception and get-together party at the hotel. Later, George H. Pringle of The Mead Corp. introduced Homer Latimer, director of paper-making at Champion Paper and Fibre Co., who as toastmaster of the evening introduced K. P. Geohegan, vice president of Howard Paper Mills and vice president of TAPPI, and Donald J. Goodman, assistant technical director of The Sorg Paper Co., to the group before introducing the speaker of the evening, Rev. Laurence Hall, who chose "Pass Along a Smile" as his subject.

On Thursday, October 5, TAPPI men were the guests of manufacturers of the Cincinnati area for extensive plant visits. Companies co-operating in welcoming the group were Allis-Chalmers Manufacturing Co., Cincinnati Rubber Co., Cincinnati Milling Machine Co., Black Clawson Co., Economy Pulp Co., Shuler and Benninghofen Co., Armco Steel Co., Shartle Bros. Machine Co., and the Hutchins Power Station.

A feature of the Engineering Division Luncheon held on October 4 was an address by the Hon. Albert D. Cash, mayor of Cincinnati, who discussed "Some Impressions from Abroad."

Some 10 paper mills in the Cincinnati area were open for inspection for those attending the conference. Among conference attendees were several men who have distinguished themselves in TAPPI and the industry. These honored guests included J. W. Hemphill, general secretary of the Engineering Division, Johns Manville Sales Co., and R. G. Macdonald, TAPPI's national secretary-treasurer.

More than 30 allied manufacturers co-operated with the Ohio Section of TAPPI in the sponsorship of the Conference.

The Sixth Annual TAPPI Engineering Conference will be held at the General Oglethorpe Hotel in Savannah, Ga., October 15-18, 1951.

Ohio TAPPI & Miami Valley Supts. Hold Joint Meeting

A joint meeting of the Ohio Section of TAPPI and the Miami Valley Superintendents Association was held on October 10 at the Manchester Hotel, Middletown, Ohio. The meeting was attended by 193 members.

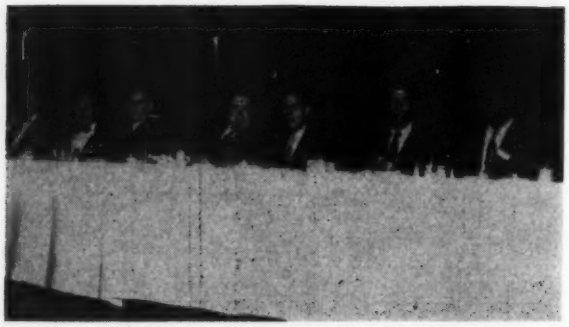
The group was welcomed by John Burdsall of the Superintendents; Don Goodman, chairman of the Ohio Section of TAPPI, replied to Mr. Burdsall's greeting, stressing the importance of the existing co-operation between the two organizations.

The program for the evening was arranged by the Superintendents through courtesy of George Kjehnle, Jr., manager, Northern Division of Cincinnati Gas and Electric Co.; and C. W. McFee, sales promotion manager of the Lamp Division of General Electric Co.

Mr. McFee introduced E. A. Lindsay of General Electric, speaker of the evening. Using visual demonstrations and slides for illustration, Mr. Lindsay discussed "Light and Paper." His presentation covered the type of lamps and amount of light necessary as applied to manufacturing areas, light conditioning and manufacturing areas, paper-making machines, calendering, bugs, beaters and refiners, chippers and barkers, digester rooms, color matching, difficult seeing tasks, laboratories, shipping and receiving, warehousing, stock and tool rooms, office areas, visual environment, maintenance, and safety.

CLOSING DATE for the Fourth Bolton Award contest, sponsored by the American Pulp and Paper Mill Superintendents Association, has been extended, from November 1 to December 1, 1950 (midnight).

NATIONAL PRESIDENT Charles E. Ackley greets the Southern and Southeastern Divisions of the Association at banquet during joint meeting in Asheville, N.C. Seated at extreme left is Justiner Weddell, St. Regis Paper Corp., who introduced Dr. Ellwood Nance, University of Tampa (seated next), guest speaker. Andrew Downey, retiring chairman of the SE Division is at extreme right



ENJOYING THE BANQUET (L to R): Cecil B. Curry, elected 1st vice chairman of the SE Division; Ray Bennett and Roy Zellers, both past presidents of National Association; L. L. (Buster) Griffiths, Draper Bros. Co., who presented golf prizes; Alan Hyer, chairman Industrial Affiliates; Tom Coldeway and W. C. Hayes, elected 2nd vice chairman and secretary-treas., respectively, of Southern Div.

Joint meeting of Southern-Southeastern Superintendents

▶▶▶ A WELL-PLANNED and well-executed program was presented at the joint fall meeting of the Southern and Southeastern Divisions of The American Pulp and Paper Mill Superintendents Association, held October 12-14 at the George Vanderbilt Hotel, Asheville, N.C. Approximately 300 members were present.

The two Divisions met together the morning of the 14th for a business session at which the retiring chairman of each Division presided for the part of the meeting concerning his group. Both groups elected officers for next year.

New Officers of Southeastern Division

Chairman—Carl T. Welte, Champion Paper and Fibre Co., Canton, N.C.

First Vice Chairman—Cecil B. Curry, National Container Corp. of Virginia, Big Island, Va.

Second Vice Chairman—Vinson K. Shannon, The Mead Corp., Lynchburg, Va.

Third Vice Chairman — Clyde G. Jones, Ecusta Paper Corp., Pisgah Forest, N.C.

Secretary-Treas.—T. B. Barnes, The Champion Paper and Fibre Co., Canton, N.C.

Southern Division's New Officers

Chairman—Otha Winningham, National Container Corp., Jacksonville, Fla.

First Vice Chairman—J. J. Thompson, Southland Paper Mills, Lufkin, Texas.

Second Vice Chairman—Tom Coldeway, St. Joe Paper Co., St. Joe, Fla.

Third Vice Chairman—Bruce E. Brooks, The Brown Paper Mill Co., West Monroe, La.

Secretary-Treas. — W. C. (Jack) Hayes, National Container Corp., Jacksonville, Fla.

Formal papers were read at several sessions throughout the three-day meeting. The wide variety of subject matter presented by the following men in their papers covered a number of interests.

"Teamwork in Pulp and Paper Mills," J. A. Jackson, Kraft Paper Division, St. Regis Paper Co., Pensacola, Fla.

"Kraft Pulp from Old Crossties," read by Dr. Reavis C. Sproull, assistant director, Southern Research Institute, Birmingham, Ala., for his co-authors, H. G. Hard, Jr., and Leslie D. Methvin.

"The Problems of Woodlands Management for the Pulp and Paper Industries in the Southern Pine Region," J. E. McCaffrey, woodsland manager, Georgetown Division, International Paper Co., Georgetown, S.C.

"Partial Acidification of Unbleached Kraft Pulp," by Jesse C. Bradbury, Southland Paper Mills, Inc., Lufkin, Tex., was read by J. J. Thompson.

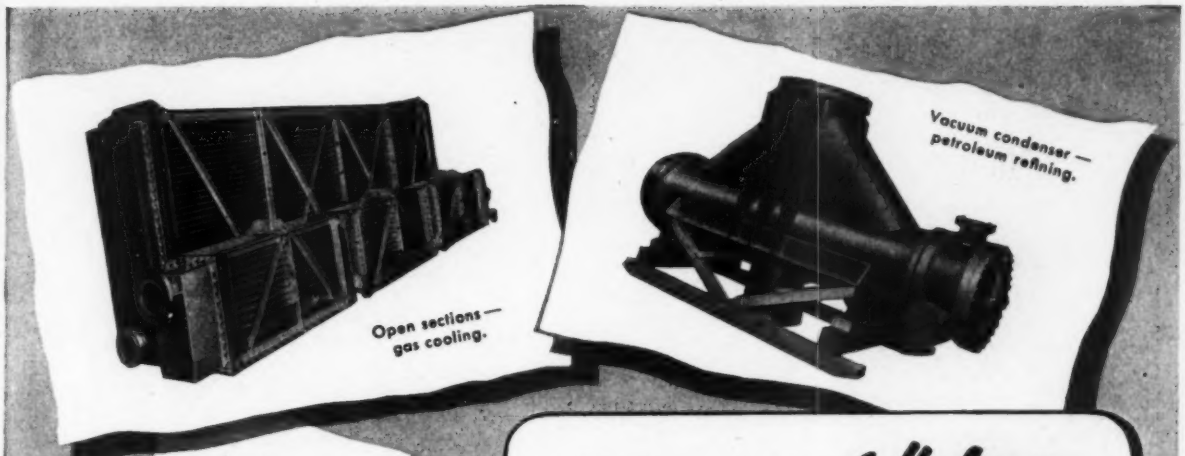
"Mill Operation from the Stream Pollution Point of View," Stuart C. Crawford, consulting engineer, Franklin, Va.

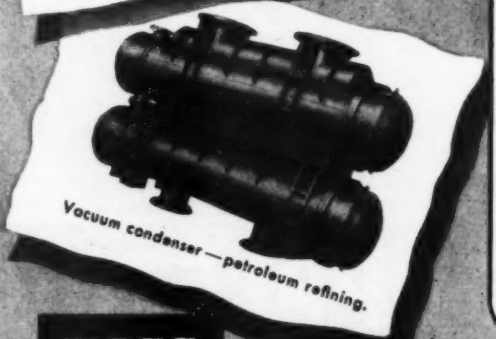
"Pulp and Paper Mill Chemical Recovery," U. J. Westbrook, St. Regis Paper Co., Kraft Division, Pensacola, Fla.

"The Rediscovery in Labor Relations,"

RETIRING CHAIRMAN Andrew Downey (left), extends good wishes to incoming officers of Southern Division: W. C. (Jack) Hayes, secretary-treas.; Otha Winningham, chairman; and J. J. Thompson, 1st vice chairman

NEW OFFICERS of Southeastern Division congratulate retiring chairman: L to R—Clyde Jones, 3rd vice chairman; Carl Welte, chairman; R. C. Bullock, retiring chairman; and Cecil Curry, 1st vice chairman





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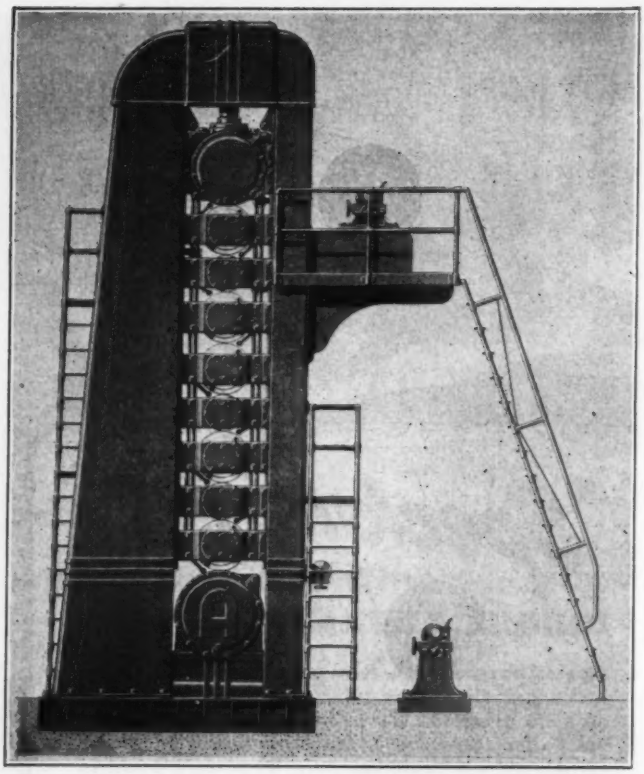

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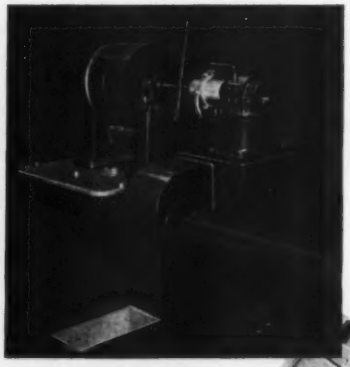

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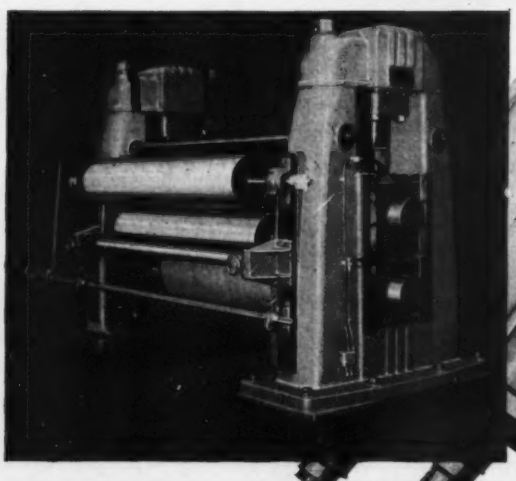

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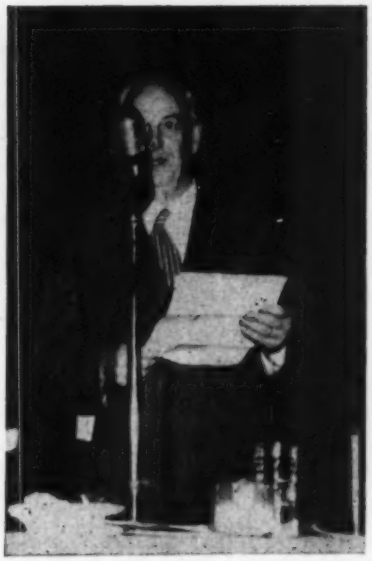
Portland

Eastern Sales
CASTLE AND OVERTON, Inc.
630 Fifth Ave.
New York

FIRST PRESIDENT of the National Association, Fred C. Boyce, poses with two who have followed him. At left is Ray Barton, at right, Wm. H. Brydges. Both are now trustees of the Association and have served as its presidents



SECRETARY-TREAS. of the National Association Harry E. Weston spoke informally at the Banquet

J. O. Wells, Ecusta Paper Corp., Pisgah Forest, N.C.

"Waste in Pulp and Paper Mills," Joseph F. Keyes, North Carolina Pulp Co., Plymouth, N.C.

"Surface Sizing and Printability of Test Liners," V. V. Vallandigham, Kelco Co., Chicago.

"The Selection of a Pulper," Jacob V. Edge, Downingtown Manufacturing Co., Downingtown, Pa.

During the course of the meeting, the Superintendents visited the Canton, N.C., plant of Champion Paper and Fibre Co., where a plant tour was followed by luncheon in the company cafeteria.

Social activities of the group included a get-together party and joint dinner Thursday evening, which was followed by square dancing. Toastmaster at this dinner was Lee M. Bauer, manager of Manufacturing departments, Ecusta Paper Corp., who introduced Harry H. Straus, Jr., assistant to the president, Ecusta Paper Corp., who welcomed the Superintendents. The square dancing and other entertainment of the get-together party, given by the mill suppliers, was arranged by George Witham, Orr Felt & Blanket Co., Piqua, Ohio, George Hardaker, Lockport Felt Co., Newfane, N.Y., and Harry Hulmes, Williams-Gray Co. Ecusta Paper's recreation director, John Eversman, directed the dancing.

Other formal events included attendance at an address of welcome made by Clarence Morgan, mayor of Asheville, which was responded to for the Superintendents by William H. Brydges, Lynchburg, Va., past president and trustee of the national Superintendents.

R. C. Bullock presided at both the Friday luncheon and the Saturday evening banquet which closed the meeting. Banquet speaker was Dr. Ellwood O. Nance, president, University of Tampa. Another feature of the evening was the presentation of past chairmen's certificates to retiring chairmen R. C. Bullock of the SE Div., and Andrew Downey of the Southern Div., by Charles E. Ackley, Crown Zellerbach Corp., West Linn, Ore., national president of the Superintendents.

Photographs for illustrating this article were supplied through the courtesy of the Southern Pulp and Paper Manufacturer.

Geo. Welp of IPI Addresses Chicago Section of TAPPI

The October meeting of the Chicago Section of the Technical Association of the Pulp and Paper Industry was held at the Chicago Bar Association, Chicago, October 16.

The meeting was opened by Chairman A. K. Roach with the announcement that the constitution as revised by a special committee had been accepted by the executive committee. The revision represents the final phase of the changeover from the old Chicago Professional Paper Group to Chicago Section, TAPPI. The revised constitution will be put to a vote of the membership at the November meeting.

J. R. Fulghum, Socony Vacuum Oil Co., introduced the speaker of the evening, George Welp, director of sales promotion and advertising for International Printing Ink Division of Interchemical Corp. Mr. Welp presented a color movie produced by his company showing the long way that printing and color reproduction have come since Gutenberg made his first experiment with movable type and Isaac Newton made his demonstration with sunlight and a prism. The movie showed what happens to formulating inks and what is required to manufacture printing ink so that it will meet modern printing conditions. Mr. Welp followed the movie with an illustrated talk, "Putting the Rainbow to Work."

Use of the spectrophotometer in color work was described with enlarged graphs of various colors. A highlight of the talk was Mr. Welp's outline of the eventual aim of the colorometrist—to have pigments available which have very definite reflectance in certain ranges which could be chosen for mixing to give the desired final color.

Kalamazoo TAPPI & Mich. Supts. Plan for January Meeting

Speaker at the joint meeting of Kalamazoo Valley Section of TAPPI and the Michigan Division of the Superintendents Association to be held January 18, 1951, will be Dr. Allen A. Stockdale, staff speaker, National Association of Manufacturers, New York.

Dr. Stockdale was luncheon speaker of the annual Superintendents Association convention in June, 1949, when the group met at Haddon Hall Hotel, Atlantic City, N.J.

OFFICERS AND DISTINGUISHED GUESTS at the October meeting of Michigan Div. Superintendents. Back Row (L to R): Roshiro Koge, acting chief, Research Section, Engineering Dept., Julo Mill, Jujo Paper Mfg. Co. Ltd., Chuo-Ku, Tokyo, Japan; Richard H. Peeters, St. Regis Paper Co.; Miyoji Kawashima, chief Planning Section, Production Dept., Jujo Paper Mfg. Co., Ltd., Chuo-Ku, Tokyo, Japan; Harvey Hartman, American Box Board Co.; Henry I. Daty, C. T. Takahashi & Co., Seattle, Wash.; and Frank Hamilton, Allied Paper Mills. Front Row (L to R): Glen Sutton, Sutherland Paper Co., and first vice pres. of the National Association; O. W. Callighan, Edgar Bros. Co., and chairman of the Michigan Div.; Robert A. Huston, Kalamazoo Vegetable Parchment Co., who was speaker of the evening; and Raymond L. Barton, Michigan Paper Co., and a past president of the National Association

Labor Relations Subject of Address At Michigan Superintendents Meeting

Robert A. Huston, manager of Public and Industrial Relations, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., talked to about 75 men at the October 19, 1950, meeting of the Michigan Division of the Superintendents Association. His subject was "Labor Relations in a Mobilized Economy."

In the early part of his talk Mr. Huston touched upon some political aspects of present labor laws, and related how the recent defense acts may affect our economy.

The first step in dissipating the distrust of labor and management, related Mr. Huston, must be taken by management. To achieve results management must demonstrate to its employees that it is a good management.

In the opinion of Mr. Huston, management can do something about cementing the employer-employee relationship into something genuine even though the collective bargaining process prevails. Mr. Huston, in continuing his remarks, made it clear that the real labor relations in a mobilizing economy are those which exist around the bargaining table and, more particularly, those experienced in the day to day contacts between the supervisors and their men.

Mr. Huston further stated that if we insist upon taking a legalistic approach in negotiating a labor agreement or processing a grievance, we cannot expect to have a harmonious relationship.

If we are to make the best of the mandate to bargain collectively, he concluded, we must try to gear our thinking to people, not laws; social humanities, not retaliatory measures. Above all we must school ourselves in what makes people tick and how we can make them tick the way we want them to.

O. W. Callighan, chairman of the Michigan Division, introduced Mr. Huston and also lead the discussion which followed Mr. Huston's address.

Other highlights of the meeting included a report by Ray Barton, a trustee of the national Association, on the joint meeting of the Southeastern and Southern Divisions, held on October 12-14, 1950, at the George Vanderbilt Hotel, Asheville, N.C. Recognition also was given to Leonard Hanks, until recently manager of the Kalamazoo plant of the National Gypsum Co., as a member of the Michigan Division of the Superintendents Association, for his promotion to the position of production manager of all of the paper mills of the company.

Fred L. Buchanan, for many years associated with the Waldorf Paper Products Co., St. Paul, Minn., who has taken over the former duties of Mr. Hank at Kalamazoo, was introduced to the group as were three Japanese guests who had been visiting the paper mills in Kalamazoo. Two of the men, Miyoji Kawashima and Yoshio Koge, are associated with the Jujo Paper Manufacturing Co., Ltd., of Tokyo; the third, Henry I. Daty, with C. T. Takahashi & Co. of Seattle.

Coming Events

Nov. 14—Meeting of Metropolitan Section of TAPPI; subject will be "Technical problems of the newspaper industry."

Nov. 16—Packing clinic, to be part of meeting of Michigan Division of the Superintendents Association, to be held at the Hotel Harris, Kalamazoo, Mich.

Nov. 27-Dec. 2—Nineteenth National Exposition of Power and Mechanical Engineering to be held in Grand Central Palace, New York.

Dec. 3-6—American Institute of Chemcal Engineers will meet at Neil House and Deshler-Wallick Hotel, Columbus, Ohio.

Jan. 9, 1951—Meeting of Metropolitan Section of TAPPI; subject will be "New ideas in the use of paper for automatic packing."

Jan. 15-18, 1951—Plant Maintenance Show and Conference, to be held at the Public Auditorium, Cleveland.

Feb. 6, 1951—The Pacific Coast Section of TAPPI will hold its annual engineering meeting at Olympia, Wash.

Feb. 19-23, 1951—Paper Week, annual meeting of the American Paper and Pulp Association and paper groups, at the Waldorf-Astoria Hotel, New York City.

April 17-20, 1951—20th National Packaging Exposition of the American Management Association, to be held in Atlantic City, N.J.

May 4-5, 1951—Spring meeting of the Northwestern Division of the Superintendents Association, to be held at the Radisson Hotel, Minneapolis, Minn.

Pulpwood Scaling Studied by Northeastern Pulpwood Groups

Three speakers addressed members of the Northeast Pulpwood Research Center and the Northeastern Technical Committee of the American Pulpwood Association at a joint meeting at the Ravine House, Randolph, N.H., October 4 and 5. The group met to study scaling of pulpwood.

B. B. Garland, head scaler of Hollingsworth & Whitney Co., presented a paper entitled "Methods and Techniques Practiced in the Actual Measurement of Pulpwood;" Harold S. Mountain, chief scaler of Brown Co., discussed methods of determining solid wood content of a measured quantity of pulpwood and significance of proper evaluation; and W. S. Bromley, forest engineer of the American Pulpwood Association, reviewed outstanding features of pulpwood scaling practices used by pulpwood companies not in the New Hampshire area. R. R. Drummond, Oxford Paper Co., program chairman, also asked a panel, led by D. B. Demeritt of Dead River Paper Co., for a discussion of "Methods and Techniques Practiced in Calculating Deductions and Cull in Measured Piles of Pulpwood."

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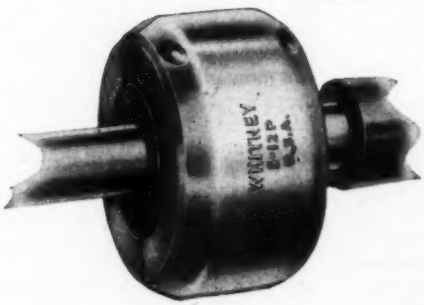

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The Paper Industry Names in the News

McCrystle Resigns From Upson to Become Gen. Mgr. of Doeskin

The appointment of John D. McCrystle as general plant manager in charge of the three mills of Doeskin Products, Inc., located at Mt. Tom and Wheelwright, Mass., and Rockland, Del., has been announced. Recently, Mr. McCrystle was first vice president of Upson Co., Lockport, N.Y.

Since he joined the Brown Co. immediately upon graduation from the University of Maine in 1932, and has also served as a consultant to Barrett Division of Allied Chemical & Dye Co., Mr. McCrystle's entire career has been in fields allied to the pulp and paper industry.

John D. McCrystle

James J. Upson

James J. Upson Elected to Serve as Admn. V.P.

In addition to his duties as secretary of Upson Co., Lockport, N.Y., James J. Upson will henceforth serve the firm as administrative vice president, as the result of board elections held recently.

A graduate of the University of Pennsylvania, Mr. Upson joined the company in 1946 after serving as a naval lieutenant in the Pacific theater during the recent war.

Eugene DeLuca Leaves Fraser to Join G. D. Jenssen Co.

The former assistant general superintendent of the Fraser Cos. Ltd. mill at Newcastle, N. B., Eugene DeLuca, has been placed in charge of technical service and process development of G. D. Jenssen Co., Inc., Watertown, N.Y.

Mr. DeLuca, a graduate of the University of Toronto, was connected with Canadian International Paper Co. at Temiskaming, Que., on process and technical work in sulphite pulp production. From 1946 until 1948 division chemist in technical control with the Fraser Co. Restigouche plant at Campbellton, N. B., Mr. DeLuca was active in the Fraser kraft developments from 1948 until his present work was undertaken.

New Members of Strathmore Advisory Council Chosen

Six new members were elected recently to positions vacated by those retiring from the Strathmore Advisory Council at the conclusion of their terms. Composed of 12 members representing the 140 distributors of products of the Strathmore Paper Co., together with the immediate past chairman of the Council, the members are elected from Strathmore merchants in the North Central, North East, Central Atlantic, South East, South Central and Pacific Coast sections of the country.

The chairman of the Advisory Council for the coming year is Courtney Reeves, Carter Rice & Co., Boston. Those elected to the Council include: W. E. Snyder, Baltimore Paper Co., Baltimore; L. V. Mulnix, Sr., Carpenter Paper Co., Grand Rapids, Mich.; L. L. Ferry, Sloan Paper Co., Atlanta, Ga.; Carl Stuyvesant, The Alling & Cory Co., New York; S. T. Jones, Sr., Hudson Valley Paper Co., Albany, N. Y., re-elected for a two year term; and Arthur W. Towne, Blake, Moffitt & Towne, San Francisco, also re-elected for a two year term. Five members of the council have not completed their terms of office.

Thos. E. Moffitt Returns to Hooker as Asst. Works Manager at Tacoma

The new assistant works manager of the Tacoma, Wash., plant of Hooker Electrochemical Co., Niagara Falls, N.Y., is Thomas E. Moffitt. Mr. Moffitt first joined the Hooker firm in 1930, and served as assistant western sales manager from 1930 to 1945; during World War II he served as acting western sales manager while Manager Albert H. Hooker was on active military duty.

From 1945 until the present appointment, Mr. Moffitt was employed successively by Weyerhaeuser Timber Co. and Pennsylvania Salt Manufacturing Co.

Robert Evans Leaves Riegel To Be Associated with Olin Industries, Inc.

Upon his resignation as secretary, treasurer and director of Riegel Paper Corp., New York, Robert H. Evans was appointed executive assistant to the president and executive committee of Olin Industries, Inc., New York.

Mr. Evans, a Phi Beta Kappa graduate of Columbia University, took graduate work at New York University and spent some time with a New York trust firm before joining the Pulp and Paper Division of the War Production Board in 1942, where he later became chief of the Pulp Allocation Office. He went to Riegel in 1945.

Robert H. Evans

L. V. Forman

Forman Leaves Institute to Direct Pulp Utilization at Scott Paper Co.

A former research associate of the Institute of Paper Chemistry at Appleton, Wis., Loren V. Forman, has joined Scott Paper Co., Chester, Pa., as staff director of pulp utilization. His work will primarily concern development of fiber sources, pulping processes, and pulp refining methods and techniques.

Mr. Forman has for the past few years been head of the Institute's research activities on pulping, pulp refining, paper conversion, container testing and paper testing. Before becoming associated with the Institute, Mr. Forman was engaged in similar work with several paper companies, and spent a year in Sweden, where he studied pulping and pulp refining.

H. L. Timms Made Gen. Mgr. of Harnischfeger-Escabana

Filling the vacancy left by the death of R. Baxter Mitchell some weeks ago,

H. L. Timms has been appointed general manager of the Escanaba, Mich., operations of the Harnischfeger Corp.

Mr. Timms left his former work at Massey-Harris Co., Racine, Wis., where he had been supervising planning and engineering of a new plant; other work with Massey-Harris was management of the company's plant at Fowler, Cal. Mr. Timms' background also includes several years work with General Electric, which he joined after graduation from Purdue University.

Robert J. Nichols now President of Brownville Board Co.

Upon the recent death of Henry H. Babcock, president of Brownville Board Co., Inc., Brownville, N.Y., the company's former executive vice president, Robert J. Nichols, was elected to the presidency.

Mr. Nichols, associated with the firm for the past 20 years, became vice president upon the death of Willard S. Gamble, at which time Mr. Babcock became president. Before becoming vice president, Mr. Nichols was general superintendent of the mill.

Concurrent to Mr. Nichols' election, Robert F. Hart, Jr., was elected a director and vice president of the company. Treasurer B. Quinn Hanchette and Secretary Raymond A. Hust will continue in their respective offices.

Staley Expansion Requires Plant Superintendent— Harry Walmsley Is Appointed

The position of plant superintendent has been created by A. E. Staley Manufacturing Co., Decatur, Ill., to insure broader supervision of the firm's expanded production facilities.

The former production superintendent, Harry Walmsley, has been appointed to the new position. He has been succeeded as production supervisor by Louis E. Doxsie, former assistant production superintendent and superintendent of manufacturing supplies. Both men have been associated with Staley for many years; Mr. Walmsley has 35 years service with the firm, and Mr. Doxsie's association began in 1933.

E. F. Wentworth, Jr., has been appointed head of the legal department of Foster Wheeler Corp., New York, with the title of attorney general. Mr. Wentworth has been with the company since 1941.

John E. Stevens, Jr., formerly vice president of Bergen Genspring Corp., New York, has been appointed assistant to the president of Edward Valves, Inc., East Chicago, Ind.

Dr. Franklin Strain Becomes Head of Pittsburgh Glass Chemical Research Labs

Upon the resignation of Dr. Alphonse Pechukas, Dr. Franklin Strain has been appointed acting director of research in charge of the Pittsburgh Plate Glass Co.'s Columbia Chemical Division Laboratories at Barberton, Ohio.

Associated with Pittsburgh's chemical operation since 1937, Dr. Strain has been serving as assistant director of research for the past eight years. Previously, he had been associated with the Barberton laboratory as a research chemist.

Dr. Franklin Strain

Arthur P. Wilson

Arthur Wilson Now With Trundle Engineering Co.

A former vice president of Frank C. Brown & Co., New York management counselors, Arthur P. Wilson, has joined the staff of The Trundle Engineering Co., consulting management engineers of Cleveland, Chicago, New York and Washington.

Covering the Northeastern states at first, Mr. Wilson will handle special assignments for both the Trundle organization and its affiliate, Trundle Associates, Inc., which was organized last year to render specialized consulting management service for the pulp and paper industries. Associated in the past with Reynolds Metals Co., Richmond, Va., Mr. Wilson has more than 30 years experience as a professional management engineer and consultant.

Executive Changes Effected at Titanium Pigment Corp.

Several changes in executive responsibility have resulted from the election of Graham W. Corddry as vice president in charge of sales of Titanium Pigment Corp., New York, a subsidiary of National Lead Co.

Mr. Corddry's former position as general sales manager of the corporation has been assumed by K. W. Ericson, former western sales manager. John A. Lutz, formerly manager of the technical service department, has been appointed eastern sales manager, succeeding W. H. Woods. Mr. Woods succeeds Mr. Ericson as western sales manager, with headquarters in Chicago.

Earl W. Diener, formerly in charge of the New England territory, has been appointed district sales manager in charge of the New York, New England and Pittsburgh areas. With headquarters in Boston, W. F. Malcolm will now be in charge of the New England territory. Other former sales representatives who have concurrently been named district sales managers include Norman E. Olson, whose district will be the Chicago area and midwestern and southern states, with headquarters at Chicago; and Fred R. Hodgson, now responsible for the Cleveland area and midwestern and southern states east of the Mississippi River, with headquarters in Cleveland.

James MacGuffie has been appointed manager of the technical service department of Titanium Pigment Corp., with New York headquarters.

Austin Ross Made a V.P. of Worthington

The manager of the Buffalo, N. Y., works of Worthington Pump and Machinery Corp., Harrison, N. J., Austin C. Ross, has been elected a vice president of the company. He will continue to serve the firm in his earlier capacity.

Mr. Ross joined Worthington in 1932 as assistant general purchasing agent after an association with Rolls-Royce of America, Inc., which began in 1919 after his graduation from Toronto University. In 1935 he was named assistant works manager of Worthington's Buffalo works, and became works manager in 1940.

Austin C. Ross

H. K. Beck

Harold K. Beck Assumes Additional Duties for Worthington Pump

In addition to serving as manager of the Washington office of Worthington Pump and Machinery Co., Harrison, N.J., Harold K. Beck will henceforth serve the company in the new capacity of commercial vice president.

Associated with Worthington for the past 25 years, Mr. Beck joined the firm immediately upon his graduation from Tufts College. Upon completion of the

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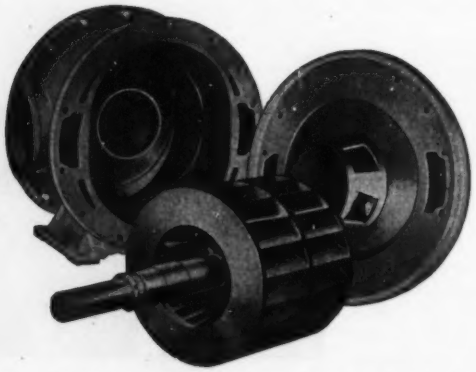

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Worthington training course, he was first sent to Washington in 1926 as a sales engineer. In 1933 he was appointed special representative for government contracts and in 1934 was appointed district manager of the Washington office.

Arthur Alcombrack Named to Wollomsac Paper Co. Post

The former manager of Frontenac Paper Corp., Dexter, N.Y., Arthur A. Alcombrack, has been named mill manager of Wallomsac Paper Mills, Inc., North Hoosick, N.Y. For the past 18 months, Mr. Alcombrack has been personnel and safety manager at Bagley & Sewell Co., Watertown, N.Y.

Mr. Alcombrack originally went to Dexter in 1945 as superintendent of maintenance at Dexter Sulphite Pulp and Paper Co. When that mill was sold to I. Lawrence Le Savey in 1948, Mr. Alcombrack joined the newly formed Frontenac Paper Corp. as mill manager.

Howard R. Jones, assistant chief engineer in the Washington office of the Forest Service, has been named regional engineer of the Forest Service's Northern Region with headquarters in Missoula, Montana. Mr. Jones, who succeeds Fred Thieme in the position, joined the Forest Service in 1930 after industry experience which included an association with Weyerhaeuser Timber Co. in Seattle, Wash.

William H. Chisholm, formerly assistant to the president of Oxford Paper Co., New York, has been elected a vice president of the firm. Mr. Chisholm, who has been associated with the company since 1940, was recently elected a director.

B. V. Jones Is Now Advertising Manager of Link-Belt Co.

Former executive assistant advertising manager of Link-Belt Co., Chicago, Bertram V. Jones, has been appointed advertising manager to fill the vacancy caused by the passing of Julius S. Holl (see Necrology).

Since joining the Link-Belt advertising department in 1923, Mr. Jones has handled production, creative direct mail and catalogue work, and was for seven years advertising manager for Link-Belt's subsidiary, Link-Belt Speeder Corp. In 1949 he was appointed assistant advertising manager, and attained the executive managership last July.

Assistant advertising manager John F. Kelly will continue in that capacity.

Cameron's New Sales Mgr. Is Eugene Ward

The former assistant sales manager of Cameron Machine Co., Brooklyn, N. Y., Eugene Ward, has been appointed general sales manager of the company.

Mr. Ward joined Cameron thirteen years ago after completing studies in pulp and paper technology at Brooklyn Polytechnic. During World War II he served the Army as a Captain in the European Theater; from 1945 to 1948 he was assistant service manager for Cameron, becoming manager of the department two years ago. His appointment as assistant sales manager was made in February of this year.

Eugene Ward

Chester M. Brown

Chester M. Brown Made V.P. of General Chemical Div.

The appointment of Chester M. Brown as vice president has been announced by General Chemical Division of Allied Chemical and Dye Corp., New York. For the past three years director of sales, Mr. Brown has held increasingly responsible positions in production and sales since joining the company 21 years ago.

Coincident with Mr. Brown's appointment was the retirement of F. Harris Nichols as vice president. A nephew of the late Dr. William H. Nichols, who organized General Chemical Co., Mr. Nichols has been associated with Allied and its predecessors for more than fifty years.

B. V. Jones

H. R. M. Acheson

H. R. M. Acheson has been appointed pulp and paper specialist for Canadian General Electric Co., Montreal district. In his new work Mr. Acheson, whose work in the field for the past 15 years has been in maintenance, design engineering, purchasing and mill management, will be responsible for the sales engineering of the firm's equipment for pulp and paper companies operating in Quebec.

Edward F. Doty Now Associated With Warren Steam Pump Co.

A well known designer of screw and rotary pumps, Edward F. Doty, has become associated with Warren Steam Pump Co., Inc., Warren, Mass. Mr. Doty, for many years allied with the Quimby Pump Co. of Newark and New Brunswick, N.J., specialized in design and application engineering while with that firm.

Purchase of Quimby Pump Division of H. K. Porter Co., Inc., Pittsburgh, by Warren Steam Pump Co., Inc., was effected last August; since that time all manufacturing of Quimby pumps has been moved to the Warren plant. (Cf. P. I., Sept., 1950)

Robert H. Noyes, Sr., president of Oregon Pulp and Paper Co., Portland, Ore., has resigned the position so that he may devote more time to personal business affairs. Mr. Noyes' successor, *Nils G. Teren,* has been vice president and general manager of Oregon Pulp and Paper Co. and Columbia River Paper mills for some years.

E. Andrew Aries departed recently on a three month tour of Brazil, Argentine, Chile and several other South American countries. Dr. Aries, of R. S. Aries & Associates, New York, is conducting an industrial market survey in view of establishment of processing and chemical industries there, on behalf of several American businesses and investment institutions.

M. B. Garber has assumed the position of director of sales for The Thew Shovel Co., Lorain, Ohio. Other personnel changes are the appointment of *J. T. Cushing* as sales manager of complete charge of all domestic sales except those to the Federal Government, and the assumption of the managership of development sales by former Assistant General Manager *Q. J. Winsor.*

Lyman Allen, Jr. Is Chief Designer for Foster D. Snell

The former assistant chief design engineer in charge of chemical process design with the American Viscose Corp., Philadelphia, Pa., Lyman H. Allen, Jr.,

has been appointed chief designer of Foster D. Snell, Inc., N.Y.

Mr. Allen, author of several articles on automatic process control and the operation and control of fractionating columns, is a member of the American Institute of Chemical Engineers. He will be in charge of the Snell Engineering Division, supervising design and construction of spray dryers, pilot plant operations, plant inspections, by-product utilization and other engineering services offered by the Snell firm.

Pennsalt Promotes Three

Several changes in personnel responsibilities have been effected at Pennsylvania Salt Manufacturing Co., Philadelphia. The former assistant manager of sales in the firm's Special Chemicals Department, Albert H. Clem, has been appointed to the newly created position of assistant to the vice president of sales. In his new position he will handle special assignments for the vice president.

The former Philadelphia district sales manager for the Special Chemicals Department, Horace F. McIntyre, has been appointed product supervisor in that department. The new Philadelphia district sales manager, John M. Davidson, was formerly a sales service representative in the Pittsburgh district.

John P. Kennedy Heads New Champion-International Dept.

New superintendent of the paper division of Champion-International Co., Lawrence, Mass., is John P. Kennedy. Mr. Kennedy's division will be the recently merged paper, pulp and chemical plants.

Mr. Kennedy, former superintendent of American Writing Paper Corp. and later assistant to the production vice president of Lion Match Co., has recently been conducting his own business as a paper and paper board products development consultant.

J. S. Snelham, formerly vice president and comptroller of Continental Can Co., New York, has been promoted to the newly created position of vice president in charge of finance, according to an announcement received from Gen. Lucius D. Clay, chairman of the board.

Ashley A. Colter, president of Diamond Construction Co., Ltd., Ashley Colter, Ltd., and A. & R. Loggie Co., Ltd., has been elected a director of Canadian International Paper Co.; Mr. Colter fills the vacancy left by the recent death of Howard P. Robinson.

Charles K. Pigman has been appointed supervisor of planning of the Middletown, Ohio, operations of Gardner Board and Carton Co., Cincinnati. Concurrently, *Edward W. Rathburn* and *John Blust* have been named acting superintendent and acting assistant superintendent, respectively, of the Middletown carton plant.

Elections at Riegel Corp.

In board elections held recently at Riegel Paper Corp., New York, German H. H. Emory, president of Riegel Textile Corp., was elected treasurer of the paper company.

Other officers elected at the same time included F. S. Leinbach, secretary; K. L. Kerridge, manager of Upper Mills, director; and John A. Segur, controller, assistant secretary.

M. E. Puyans and *Richard McAvoy,* treasurer and general counsel, respectively, of the Great Lakes Carbon Corp., New York, have been elected vice presidents of the firm. At the same election, Economist *J. W. Meader* and Credit Manager *W. O. Ashe, Jr.,* were elected assistant treasurers.

Edward A. Livingstone, vice president in charge of sales of The Babcock & Wilcox Tube Co., Beaver Falls, Pa., has been named to the Steel Products Industry Advisory Committee to advise in administration of the Defense Production Act as it affects the iron and steel industry.

H. Paul Petzold has been appointed assistant mill manager of Oxford Miami Paper Co., West Carrollton, Ohio. Mr. Petzold, formerly company plant engineer, has been associated with the firm in that capacity since 1937; his prior connections were with International Paper Co. at Niagara Falls and Palmer, N.Y.

Dr. Harvey J. MacAloney, for the past 25 years associated with the U. S. Department of Agriculture on various insect research and survey problems, was on September 27 selected to have supervision over the forest insect survey, a new project of the Bureau of Entomology and Plant Quarantine.

Robert J. Casey has joined J. M. Huber Corp. as a technical salesman for coating and filler paper clays. Previous to this appointment, Mr. Casey was assistant to the coating superintendent at American Coating Mills, Elkhart, Ind.

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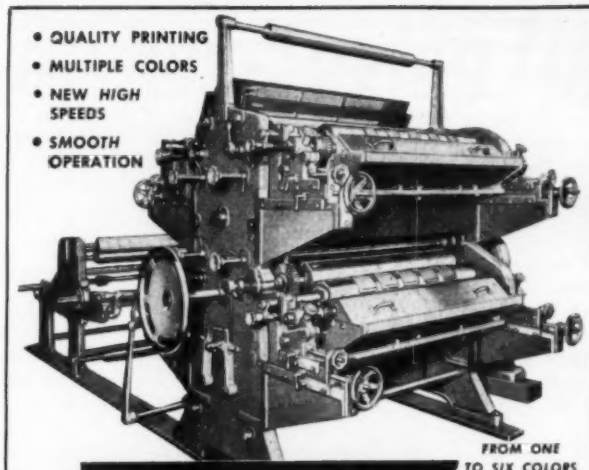

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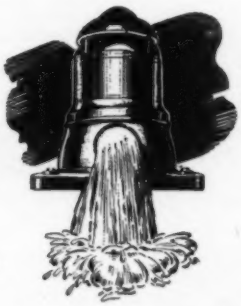

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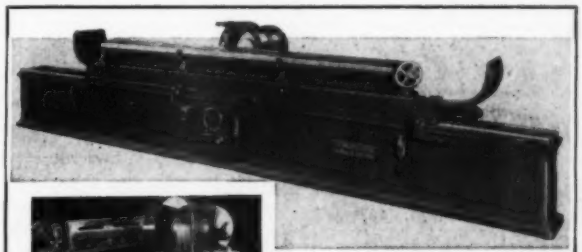

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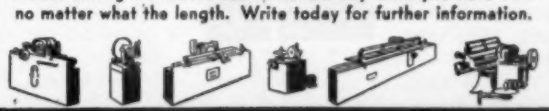

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Robert S. Aries, president of Robert S. Aries and Associates, New York, has been elected treasurer of the Association of Consulting Chemists and Chemical Engineers, Inc., New York, for a one-year term which began October 24.

Benton R. Cancell has resigned the position of vice president and general manager of manufacturing in the Printing, Publication and Converting Paper Division of St. Regis Paper Co., New York, which he has held since becoming associated with the firm in 1948, to join Rhinelander Paper Co., Rhinelander, Wis.

J. E. McQuaid, Seattle branch manager of Electric Steel Foundry Co., Portland, Ore., has been made sales manager of the Contractor's Equipment Division at the firm's main office. Simultaneously, Mr. McQuaid's former assistant at the Seattle office, *Wilson V. Latimer,* has been made manager of that office.

P. J. Gallagher has been appointed general sales manager of Hinderliter Tool Co., Division of H. K. Porter Co., Inc., Pittsburgh. Mr. Gallagher, formerly district sales manager for the Porter firm in Detroit, will make his headquarters at the company's main offices in Tulsa, Okla.

C. Edwin Ponkey has been appointed general manager of the Columbus Division of International Derrick and Equipment Co., Dallas, Tex. He resigned as vice president of the Sheldrick Manufacturing Corp. to accept his new position. Mr. Ponkey succeeds Ferguson Barnes, who recently resigned from the Columbus Division.

J. W. Greene has been appointed to the newly created position of assistant manager of the Valve and Fitting Department of Crane Co., Chicago. His most recent work with the firm was that of sales manager of the New York branch.

The Paper Industry Necrology

Julius S. Holl

Advertising manager of Link-Belt Co., Chicago, for almost 40 years, Julius S. Holl passed away October 24, following a prolonged illness. He was 64 years of age.

Mr. Holl became associated with the Link-Belt Co. when he entered the employ of its subsidiary, The J. M. Dodge Co., Philadelphia, in 1905 as clerk and stenographer. He advanced from one position to another and later joined the Link-Belt advertising department. In 1911 he was made advertising manager at Philadelphia with instructions to move the company's small advertising department to Chicago.

Julius Holl

The L-B advertising department today consists of about 40 people and uses over 200 business and industrial publications to reach the trade.

Throughout advertising circles, Mr. Holl was very well known. He had a very active hand in the development of the Engineering Advertisers Association of Chicago (now CIAA), founded in 1919, and was elected president in 1920. He also helped in the organization of the National Industrial Advertisers Association and, as vice president of this national group, he conducted a three-day industrial advertising session and exhibit that NIAA held in London, England in 1924. He was elected president at that meeting. One of Mr. Holl's last appearances with a national group was when he attended the annual meeting of the NIAA in Los Angeles early this year when he was one of its honored guests.

Surviving are the widow and a son, Julius S. Holl, Jr.

Alvin H. Johnson

An engineering leader in the pulp and paper industry in the United States and abroad for the past 21 years, Alvin H. Johnson, passed away October 1 at Mount Vernon, N.Y. He was 53 years old.

Mr. Johnson, whose engineering consultant firm is located in New York, had undertaken the development of basic pulp and paper industries in numerous foreign countries. The latest project, under assignment for the Chinese Nationalist Government in Shanghai, was completed in 1948. He was also responsible for the erection of many plants in the United States, the last of which was at Elizabeth, La. (Cf. P.I., August, 1950)

Mr. Johnson, a member of TAPPI and the New York State Society of Professional Engineers, is survived by the widow and one daughter.

Pfc. Myron P. Marble, formerly employed by Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich., was the first Kalamazoo citizen to give his life in the Korean war. Pfc. Marble, who was 22 years of age, had served with the Army in Japan for a year and a half before being assigned to duty at the Korean front.

Elbert G. Fisher, International Paper Co. consulting engineer, passed away October 23 at the age of 81. Before his association with International, Mr. Fisher had been with McEwan Paper Co., of Whippany, N.J. The widow survives.

Earl E. Robertson, vice president of Flambeau Paper Co., Park Falls, Wis., passed away October 10 at the age of 64. Mr. Robertson had been associated with the Kansas City Star Co., which owns the Flambeau firm, for more than 50 years.

Wilbur T. Soulis, chief engineer of Dixie Cup Co., Easton, Pa., passed away October 10 at Bethlehem, Pa. Mr. Soulis, who was 57 years of age, had been associated with Dixie since 1919. The widow and seven children survive.

Edward M. Mills, principal founder and until 1943 president and director of Rayonier, Inc., and until recently a director of Crown Zellerbach Corp., passed away October 10 at the age of 75. Mr. Mills joined Zellerbach interests in 1919, and later organized four companies which built dissolving pulp mills; when those mills merged into the Rayonier firm, Mr. Mills was elected president. The widow and two children survive.

S. Richard Holmes, chemical engineer for Gardner Board and Carton Co., Cincinnati, Ohio, passed away October 11 at the age of 42. With the exception of six years spent in the Army during World War II, Mr. Holmes had been associated with the Gardner firm continuously since his 1930 graduation from the University of Cincinnati.

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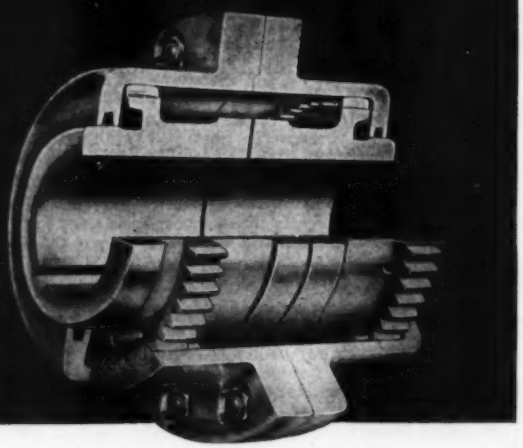

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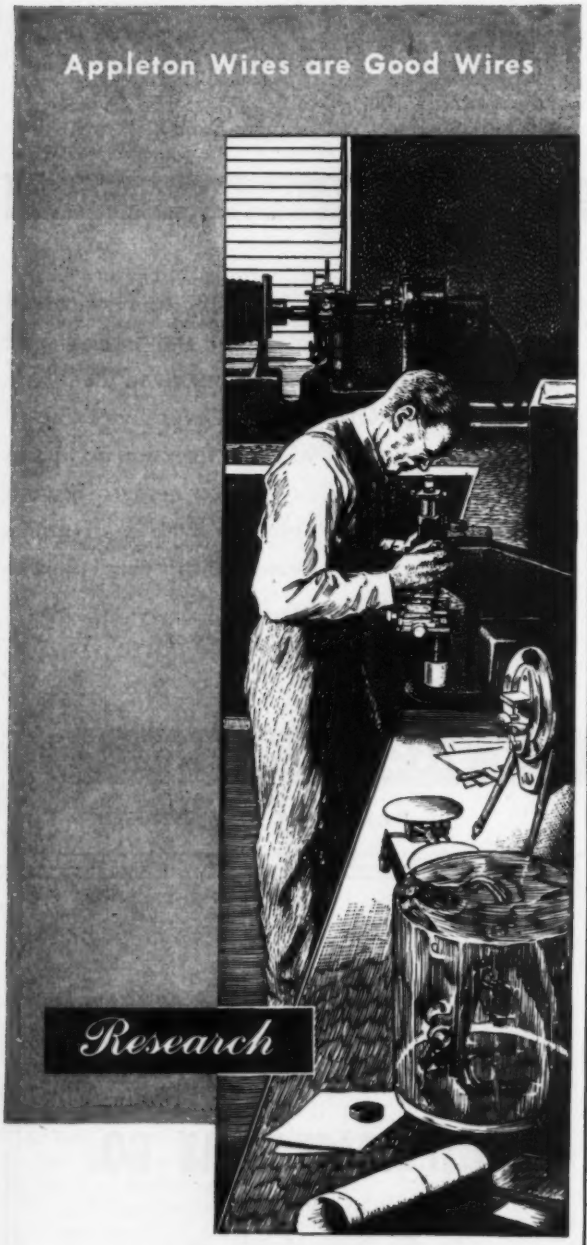

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The Paper Industry International Review

New paper machine in operation at the Kankinara mill

The Titaghur Paper Mills Company, Ltd., as a part of its postwar planning has put into operation a new paper machine (probably the first in India since World War II). This replaces an old machine installed *over 70 years ago!* The new machine (made in Edinburgh) has a Harland sectional electric drive, and is designed for the production of machine coated art paper. Another piece of new equipment put into operation was a turbo-alternator (made by Thomson-Houston Company, Ltd., of Rugby, designed to pass out low pressure steam for process purposes.

The inauguration of this new equipment involved a unique ceremony, at which Sir Edward Benthall and Sir S. N. Ray both spoke. Many visitors from Calcutta were present, some of them witnessing a paper machine operation for the first time in their lives. Sir Benthall cut the tape in the machine room, thus commissioning the new machine. Sir Badridas Goenka, at the entrance of the power plant, cut the tape which inaugurated the new turbo-alternator. Tea was later served in the well-kept gardens of the mill. Art paper illustrating the ceremonies was made from an all bamboo base. (From *Indian Pulp and Paper*, April, 1950).

International Training Center to be Established in Pakistan

A plan to assist the economic growth of underdeveloped areas will take tangible form in Lahore, Pakistan, late this year, through the establishment of an international training center which will equip technicians of Asian countries for the preparation of well-supported development projects. The experience gained at the center should prove to be of value to countries whose participating technicians will be better equipped to prepare projects suitable for consideration either by domestic agencies, e.g., national development boards or private investors, or, where foreign financing is needed, by appropriate private or public financing institutions.

The center, officially called the Asian Center on Agricultural and Allied Development Projects (Asian Training Center) is to be sponsored jointly by the Government of Pakistan, FAO, the International Bank for Reconstruction and Development, and the United Nations, with the Economic Commission for Asia and the Far East cooperating.

Countries of Asia and the Far East have each been invited to send up to 8 participants to the center, which will operate October 1 through December 22. The training will cover the principles and practice of formulating development projects in agricultural and related fields and methods of appraising their economic feasibility.

If the Asian Training Center justifies the expectations of its sponsors, other international training centers of this kind may be set up when increased funds for technical assistance become available. (From *FAO Bulletin*)

Australian News

The Australian Newsprint Mills Ltd., at Boyer, Tasmania, is busy installing new machinery which will raise output of newsprint from 30,000 tons a year to 80,000 tons. Erection of the three-roll Dominion paper machine is nearing completion, and should be ready for operation some time this month. However, delays in deliveries of steel supplies and Australian made equipment—the result of a steel strike some months ago—needed for the screen room, beater room and woodmill, will halt production for several months.

All necessary excavation work is completed at the Kinleith pulp mill, and necessary roads have been built. Plans for pulp mill buildings are nearly completed and tenders have been called for building contracts for over half of the total mill buildings required. Construction on the buildings should begin this month; major equipment should be shipped to Australia in the near future. The kraft paper machine, with a capacity of 15,000 tons per year, will be manufactured by Walmsley Ltd., Bury, Lancashire, and the electrical machine drive will be the work of Harland Engineering Co. Ltd., London. It is hoped to have the mill in production by the end of 1952.

Ballarat Paper Mills Pty. Ltd. is beginning production of art and coated papers; with its associated company, Papyrus Pty. Ltd., this mill should be able to meet Australia's full requirements for such papers.

THE MYSORE PAPER MILLS HAVE decided on modernization of their caustic soda plant. They have ordered modern equipment for a complete turbine purification, electrolysis and evaporation plant from Messrs. Krebs & Co., Zurich (represented in India by Messrs. Volkart Brothers, Bombay). The electrolytic plant will be equipped with Krebs 1500 amps. diaphragm cells, which represent a considerable technical advance in many mechanical and structural features from conventional diaphragm alls. A large number of plants in Europe and elsewhere are already equipped with these alls and have proved their worth by larger outputs at lower cost. (From *Indian Pulp and Paper*)

Foreign Abstracts . . . . . .

Studies at the Norwegian Pulp and Paper Institute

Two researches undertaken by the Chemical Pulp Division of the Institute in 1949 are described. The first deals with digestions with waste liquor; the second deals with determination of residual lignin in bleached pulps. In the former case, the repeated use of sulphite waste liquor on the results of magnesium and calcium base cooks (at a maximum temperature of 135 C.) were studied. Methods for determining acids other than sulphurous acid in such waste liquors are discussed. The results of other investigators (like Hägglund and Sundman) were confirmed. When a strong pulp was produced (i.e. using short cooking cycles) and when the acid conditions were carefully controlled, an acceptable product could be obtained. The sugar content of the liquor decreases unavoidably and hence the alcohol yields also decrease.

When digestion periods are extended, cooking conditions become more erratic, and the results are unpredictable. Brightness of these pulps is low, but they can be bleached to high whiteness with chlorite. When lower maximum cooking temperatures are used, the results should prove more satisfactory. There was no marked differences between magnesium and calcium bisulphite digestions.

In determining residual lignin, the technique of Giertz (*Svensk Papperstidn* 48, 485 (1945)) was modified. A Beckman quartz spectrophotometer was used to study the ultraviolet absorption of sulphuric acid solutions of the bleached sulphite pulps, at various stages of the reaction. At all wave lengths, the absorption was found to increase linearly with time (up to six hours) and an extrapolation to zero time thus becomes possible. The basis for identifying the ordinate of intersection at zero time with the *lignin content* is fully discussed. Increase in absorption with time (up to six hours) appears to be correlated with *hydroxymethylfurfural* formation, which varies markedly in different pulps.

These variations appear to be directly con-

nected with pulp purification and especially with hemicellulose content. When the reaction time (in sulphuric acid) is greatly prolonged, unknown substances are formed. Improvements in the present technique are discussed. The author refers to the work of others but neither footnote nor bibliographic references are given. The first section includes 1 table and 18 graphs; the second section, 1 table and 10 graphs. F. Loschbrandt. *Norsk Skogind.* 4, No. 5, 119-36 (1950). (Original in Norwegian with an English summary).

Suitability of the Cobb test for determining degree of sizing

Factors influencing the Cobb absorbency test are discussed, and a graph is given showing the influence of entrapped air. When the tests were carried out on the back (or the groundwood) side of duplex paperboard, higher absorbency was attained when the comparatively non-porous, pulp layer on the opposite side is stripped off. When however, the entire test sample (except in the area to be tested) is coated with a thin film of Pliolite, absorbency decreases.

For hard-sized papers, absorbency bears almost a linear relationship with the square root of the absorption time. With papers that are poorly sized, it was found that the absorbency curve plotted against the total weight of the sample passes through a maximum and then drops sharply. (This was noted for laboratory sheets sized similarly, but with varying basis weight; or when using several sheets in a pile.) With hard sized papers a constant, maximum absorbency value is reached, when a certain basis weight has been attained (and the graph flattens out after this is reached). The peak in the curve of a slack-sized paper is probably due to simultaneously acting factors (part of which cause retardation and part promotion of absorptivity) as the basis weight is increased.

In his experiments, the author used a Trypan-blue-black dye, and found that this had some influence on absorptivity (especially in poorly sized sheets). For this reason, the British and American techniques of using water in place of a dye solution is preferable. Five curves and 6 references are given. The test referred to is that of Cobb and Lowe, *Paper Trade J.* 98, No. 12, 43-6 (March 22, 1934). L. Nordman. *Paper and Timber* (Finland) 32, No. 5, 129-31 (1950). (In Swedish with English summary).

The Utilization of Paper in France

The annual per capita consumption in member countries of the European Economic Council, according to "1949-1950 declarations" is shown in Table 1 at right.

(It is interesting to note that the figure for the United States is 150 kilograms.)

France occupies an intermediate position among paper consumers. It is evident that a country of high culture has certain minimum paper needs, and must suffer if those needs are not fulfilled.

Despite great government efforts to place paper at the disposal of book publishers during the German occupation, a total of only 3,100 tons were allocated for that purpose during 1943 and 1944—(compared to a mean annual figure of 35,000 tons before the war). The largest part of the paper produced in this period went to the "controlled" newspapers.

Since the war, the relative allocation of paper for books and newspapers has approached the prewar norm. This situation is reflected in Table 2 below.

The production capacity of newsprint mills is still at least 30% greater than newsprint consumption. These plants are, therefore, looking for other markets, at least temporarily.

The future of the French packaging paper industry appears bright, because a considerable market for these materials (particularly krafts) remains to be developed. For example, the packaging of certain products which, in the United States has required wrapping paper, is still being done in jute sacks in France. Paperboard containers have scarcely been exploited, even though the American Army revealed their potentialities.

—Unpublished article from *Extinfor* (Pages de France). By S. Beracha.

Jamaican banana trash as a possible papermaking raw material

Samples of this fiber from the leaf sheaths were examined at the Imperial Institute *(Bull. Imp. Inst.* 46, 218 (1948)) with only partial success. The soda process gave only moderate yields of pulp and the latter had certain undesirable properties. Later a study was made in the laboratories of the Colonial Products Advisory Bureau on a sample of "banana trash" (dried leaves and petioles, discolored by possible fungal attack) which is produced in quantity.

The cellulose content of this material was only about 38%. The average fiber length was 1.33 mm. The material chopped into 3-inch lengths was given (what was substantially) a commercial soda cook. The "trash" was readily digested, giving a 33-39% yield, but requiring an abnormally high caustic soda consumption. Pulp evaluation showed that the pulp had only a fair breaking length and burst factor, with a moderately high tear and stretch. The pulps drained with difficulty, and were not easily bleached and the yield of a pale cream colored pulp was only about 28%. The pulps retained considerable shive and the "wetness" of stock was probably due to parenchymatous tissue.

Paper from such pulp would be poor in quality, and its production is evidently uneconomical. A. E. Chittenden and H. E. Coomber (British) *Colonial Plant and Animal Products* 1, No. 1 63-67 (1950).

Waste-heat problems in the Essvik Sulphite Mill

The mill produces 36 thousand tons of bleached sulphite per annum and operates an alcohol fermentation and distillation plant. The sources of waste heat at the mill and improved means for their utilization are described. A scrubber permits the recovery of heat from flue gases. A newly constructed air preheater is also described. Although only relatively small units are used, the efficiency of the boiler plant is 92-3%, provided the utilized waste heat (termed "secondary" heat) is considered equivalent to live steam. The article is illustrated with 10 figures. Torgny Olsson. *Svensk Papperstidn.* 53, No. 13, 356-60 (1950). (Original in Swedish with an English summary).

Internal Tear Resistance

Instruments based on the Elmendorf design (including the modification of Thwing *(I)* and that of Marix *(II)* are described with special references to their methods of calibration and to some of their weaknesses.

A description and illustration are given of the so-called Australian "Dynamic" tear tester *(III)*, its operation, performance, and usefulness, so as to provide a background for its formal adoption by the Technical Association of Australia. *III* conforms to TAPPI specification T414m, but gives internal tear resistance values significantly lower than those given by an instrument which was equipped with a sector of *I*. It also gave values equivalent to or lower than those given by *II*. For all types of paper, *III* seems to give a truer assessment of those factors, which are measured as in-

TABLE 1 (in kilograms)

Country	Newsprint	Kraft	Other Papers	Total
Austria	4.5	2.5	17.0	24.0
Benelux	6.9	4.8	26.0	37.7
Denmark	12.5	4.1	34.9	51.5
France	6.9	3.8	19.6	30.3
Greece	1.6	1.2	1.9	4.7
Iceland	8.1	15.4	8.8	32.3
Ireland	4.9	2.8	11.8	19.5
Italy	1.6	0.9	7.0	9.5
Norway	8.0	12.6	30.0	50.6
Portugal	1.3	0.6	4.2	6.1
Switzerland	9.7	3.2	39.4	52.3
Sweden	16.1	13.9	40.1	70.1
Turkey	0.6	.....	1.3	1.9
United Kingdom	13.0	7.0	39.0	59.0
Bizonia	3.2	3.2	17.6	24.0
French Zone of Occupation	4.9	1.3	17.8	24.0

TABLE 2

	1936-1939		1946		1947		1949	
		Percent		Percent		Percent		Percent
Total tonnage of newsprint and writing papers produced	650		422		440		560	
Allocated to newspapers	350	50.8	191	45.3	200	45.4	240	42.8
Allocated to book publishers	35	5.4	40.8	9.6	37	8.4	35	6.2

ternal tear. By using interchangeable sectors of varying capacities, *III* may be used for testing a very wide range of paper and board.

The paper test specimens used in Australia are described. They do not conform to TAPPI specifications. W. E. Cohen and A. J. Watson (Div. of Forest Products, S. Melbourne, Australia). *Proc. Australian Pulp Paper Ind. Tech. Assn.* 3, 212-44 (1949).

New beating equipment

The article gives a brief description with three illustrations of a new beating apparatus (I) having about the same capacity as that of a common hollander. It consists of three main parts: a riveted iron framework, a rotating outer drum, and an inner rotor. The drum and rotor are driven by separate motors and in opposite directions. The pulp suspension (7% consistency) is fed from one end of the drum and after refining (or beating) the slurry is discharged at the opposite end of I. Beating action may be varied by altering the amount of pulp fed through I and by changing the angular speed of the rotor. Comparative tests on kraft (K) and imitation parchment (P) were made in an ordinary hollander and data are given in the following table (in which the paper strengths in the usual hollander are taken arbitrarily as 100).

		After beating in	
		Ordinary Hollander	I
Tensile strength	K	100	170
	P	100	138
Bursting strength	K	100	153
	P	100	134
Tearing strength	K	100	77
	P	100	100

It is obvious that in general the tensile and burst, as developed by I are greater than those developed by usual beating. However, the tear (in the case of kraft) shows a marked decrease when I is used. Advantages claimed for the new equipment are its continuous operation, uniform beating action, relatively low power consumption and good disintegration of tailings. P. Ceuterick. *Papierwereld* 4, No. 14, 246-8 (1950) (In Dutch, with English summary in *Tech. Bull. Brit. Paper and Board Makers Assn.* 27, Nos. 1-3, 1-2 (Jan.-March, 1950).

Bleached maritime pine pulp

After making very brief reference to sulphite pulp made in the Tartas mill from maritime pine (I), the author outlines the history of bleaching kraft pulp (II) obtained from I. When bleached at a low density (3% consistency), II made in France showed approximately the same brightness, "stability" and alpha-cellulose content as did those of II of Scandinavian origin but the strength of French II was distinctly inferior. When French II was bleached in four steps at 30% consistency, a marked improvement was noted in breaking length, folding endurance, tear resistance, with a slight improvement in bursting strength. However, the quality of bleached II from I was still well below that of the best grade of Swedish II. An excellent, but difficultly bleachable Swedish II when bleached to a brightness of 87% in six steps, the final one of which involved a flash bleach with chlorine dioxide (from acidified sodium chlorite) gave a product very high in folding endurance, and quite high in other strength properties. Comparative data are given and schematic sketches show the bleaching operations. L. Chadeyron, *Papeterie* 72, 357, 359, 361, 363, 365, 367, 369 (1950). (In French)

Constituents of Pine Heartwoods

Heartwoods of the following European pines were examined: Stone pine, maritime pine, Aleppo pine and *Pinus nigra*. Of these, the first and the last two contained unusually high amounts of ether soluble extractives (37%, 42% and 31% respectively). All of them contained small amounts of "membrane substances", 3 of them contained arabinose, and all contained very small amounts of phenolic substances (*pinobanksin* in maritime pines, *pinosylvin* in Aleppo pine and its monomethyl ether in *all excepting* maritime pine). (These phenols are substances interfering with the sulphite cook.) José C. Alvarez-Novoa, H. Erdtman, and Gösta Lindstedt. *Acta Chemica Scand.* 4, 444-47 (1950). (In English.)

Meeting of Austrian pulp and paper chemists at Graz

The meeting was held in Graz, Austria at the Institute of Technology, on May 19th and 20th. Dr. Linhart was chairman, and delegates were present from America, Germany, Switzerland, Italy and Sweden. The following subjects were discussed: I) *Absorptivity of paper halfstuffs* (by O. Wurz); II) *Developments in continuous refining* (by F. Wultsch) giving an illustrated account of more recent equipment (much of it built in the U.S.A.) as well as the physical properties of pulp refined under varying conditions; III) *Impressions of a trip through the U.S.A.* (by A. Salzer) placing emphasis on recent American advances in semi-chemical pulping of hardwoods; IV) *Concentration and burning of sulphite waste liquors* (by F. Kann), in which the advantages and disadvantages of the Ramén and Rosenblad systems were discussed as well as the properties of resultant flue gases. Finally, *the production of yeasts from sulphite waste liquors* was discussed by C. Best. *(Das Papier* 4, 15/16, 320-21 (August, 1950) (In German).

Aging of impregnated insulating paper

Losses in paper-insulated cables are due largely to the formation of bubbles of dissolved gases in the impregnating medium (the oil) in which, under the influence of an electric field, electric discharges take place, which disintegrate the oil. The presence of oxygen increases this decomposition. Impregnating oils should therefore be degassed scrupulously. Paper that has been impregnated, ages independently of high electrical stresses and this aging is the faster, the more active the loss of oil components. Initial treatment of both paper and oil are determining factors in the life of paper insulation. A. Rauth. *Electricien* (Paris) 61, 143-7 (1948) (Original in French. English abstract in *C.A.* 43, 4464 (1949).

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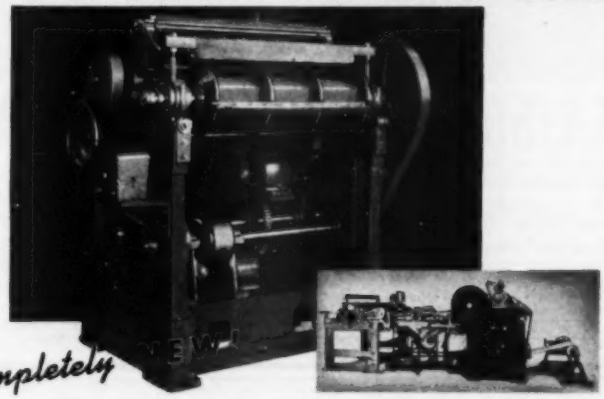

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Convention Papers . . . Abridged

Safety—a cornerstone of security*

COLA G. PARKER
President
Kimberly-Clark Corp.

What is it that most people in all our various businesses are thinking about today most of all? It struck me that it was usually labeled "Security"; and that thinking about it, talking about it, demanding assurances as to various phases of it, wasn't confined just to our industries or businesses; it is the universal search everywhere.

What is its first prerequisite? Of course it is safety—personal, physical safety—both on and off the job. Hence my title. But—as I hope you will agree—it implies much more than that.

To attempt to assure security is a big order. Sometimes the word can be a bad word and then again it can have the best meaning that any of us know. The word is used in Kimberly-Clark to help explain an outstanding characteristic of our own company, of which we are all proud. We put it thus, "Maximum security without undue sacrifice of opportunity." That description covers a broad look at what we have to offer to those who make up the company. It represents security on the job and for life members who have retired, security they have earned and hence which comes without strings tied to it. No one in history ever has enjoyed security that takes away freedom.

More specific to my subject, no one ever has enjoyed time away from work to nurse injuries. Nor does the man who earns retirement enjoy it fully when the golden years are lived lacking an arm or a leg. We never have found an employee who has benefited by an injury. In every instance the individual would rather have an arm than $16,000 which Wisconsin compensation law might allow, or a thumb instead of a check for $3000.

But these things are happening every day and the point I am making is that we are not doing a good job in these United States when it comes to that cornerstone of security which is safety. It's a black mark that stands out like the proverbial sore thumb, particularly because the background on which it stands is such a glorious one.

I won't subject you to hearing again the statistics which tell how Americans have more than lapped the rest of the world in production of automobiles, refrigerators, telephones, and the many items that we take for granted in everyday living. Truly the greatest revolution America has experienced since its founding is still that one which began in the 1820's—the industrial revolution that has brought continually improved products at reduced cost to more and more people for 125 years. However, since 1825 the abilities required of industrial management never have been static. Some of these requirements we have met—others, not. We were the arsenal of democracy in the last war—and our census figures show we have increased our productivity by 65 per cent since 1940. But have we increased our safety by 65 per cent? By no means. One of our failures has been in the field of safety.

If this were not so, then the 1949 edition of *Accident Facts* published by the Council would not have this country rated 27th in a field of 31. In other words, there were only four countries where people suffered more accidental deaths than in America. This is surely not security in the fullest sense, even though this bad record is not attributable to industry per se, but covers all manner of accidents.

What are our excuses? Some say we people in industry have an alibi that others don't have. Production has increased rapidly, and where there are machines in use, there are hazards. At least you might say that the human element—always so important—has greater latitude for error. I do not accept that excuse; not when I see what can be done.

It can be done. Our safety director sent me an issue of the *Industrial Supervisor* which told of a foreman who supervised 89 men for 29 years, and although this department's work was considered hazardous, the foreman's supervision was such that not one man of the 89 suffered a lost-time injury. If you figure that out—on the basis of a 40 hour work week—that meant more than five million safe man-hours. That is a period which on our national average would have produced more than 90 lost-time accidents. He and his group had none.

Obviously he didn't do this job alone. But his had to be a main responsibility. Certainly help wanted is a sign some of the rest of us should use.

At the same time that I saw this record, I was also sent a prize-winning essay written by a youngster on the subject, "What Dad's Safety Means to Me." I want to read this to you, even though you may already have seen it yourself.

"Dad's safety is something that the average boy or girl doesn't think about until they have been asked that question.

"The first thought that came to my mind was that Dad's safety means happiness instead of sorrow.

"As long as my Dad is safe, I know I can go to school every day and give my whole attention to my studies. After school I can take part in athletics or other events. That gives me a chance to build up my body as well as my mind.

"Dad's safety means my safety. What Dad has learned about safety he can teach me, by telling me and also by example.

"As long as my Dad is safe we can do things together. But if he should have an accident, then I might not get to have fun with my Dad any more."

I looked at this essay and I thought of the foreman who led 89 men through 29 years of safe work. And I thought of the immense satisfaction that he always will feel.

I thought, too, of our own safety program. Our people have recognized the benefits of safety programs for a long time. We have had organized and formal programs since 1914, when Mr. Shattuck first led an industry movement in the Safety Council. The Council's records tell us that since 1926 our mills have been awarded 15 first-place plaques, plus an equal number of lesser awards. Also there have been many special

(*) Abridged from a paper read before the Pulp and Paper Section of the 38th National Safety Congress, held in Chicago October 16-20.

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acknowledgements from time to time. For 1949 our U.S. operations covered more than 16,000,000 man-hours of production and 45 accidents, for an average frequency rate of 2.77. This is approximately six times better than the industry average as reported by the Department of Labor.

But somehow accidents will happen, despite every precaution. But when they do, Kimberly-Clark does its level best to see that the particular accident is never repeated. Each accident calls for an investigation report, and I want to tell you that that report never stops short of top management. It describes the conditions under which the accident occurred and is accompanied by voluminous comments and recommendations for prevention. Such recommendations come from the injured person, at least one co-worker, the foreman, the superintendent, the safety man, a union representative, members of the safety committee, the mill manager, a staff representative, and any other participant. The judgment of all is heeded and, just as it is heeded, so likewise the help of all is needed for further improvement.

We do all this—and more—because we believe that safety is indeed a cornerstone of security. If we did not do so, how could we face a bereft family and tell them that their Dad was no longer safe.

It is clear that the uncertainties of our times have contributed to the urge for security—an urge which is international. Propaganda for unsound dreams of Utopia have spurred it on. But above all, lazy, fuzzy, and wishful thinking with a lack of sound understanding of what makes for real security has played a major part. And it is in this latter field that the political approach has found its greatest aid.

There is nothing wrong with the desire for security in its various facets. We all want it—safety of person, safety of property, assurance of a living, independence in old age, education for ourselves and our children, and our fair share of the other good things of life, and certainly safety of our country.

Quite obviously national security is a governmental matter. It is a government obligation—one of the purposes for which—as the Declaration of Independence puts it—"governments are instituted among men—deriving their just powers from the governed." To that purpose we all must and should contribute.

Likewise in the case of safety of person and property—against individual aggression—we have laws against assault, theft, burglary, arson, and the like. We have minimum wage rates which effectively prohibit employment of those who cannot produce enough to justify the rate. We have so-called social security, unemployment compensation, and new schemes by the hour—proposals for which have given rise to the expression of security "from the cradle to the grave."

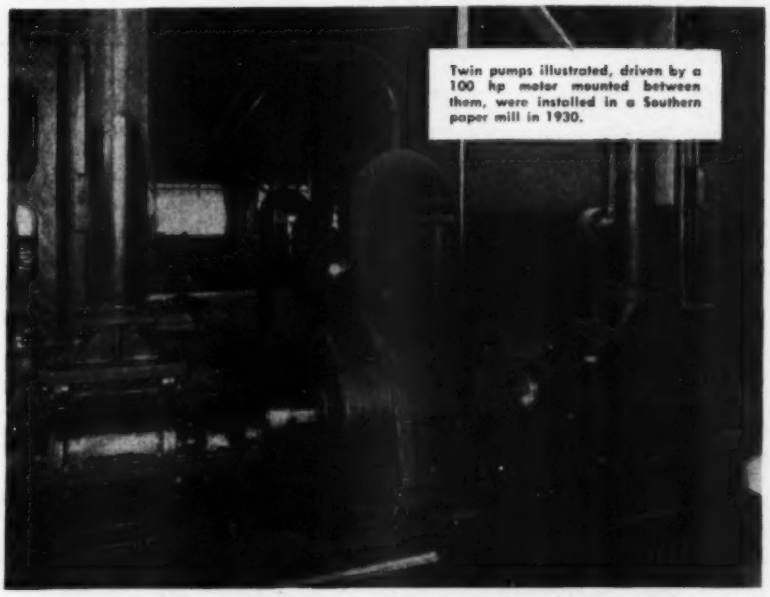
Should we not ask ourselves this question? Who is to be guaranteed security and by whom, for how long, and in what degree? Should we not also ask whether what we are promised or what is being held out to us—particularly in political circles—is a phoney, or whether it is all wool and a yard wide?

Quite obviously the present urge for security stems in large part from our last depression; one that in my humble judgment was needlessly prolonged because of artificial interferences just when we were about to emerge from it.

And as we think of this urge and its consequences we might as well remember that Hitler and Stalin are the symbols of the only two countries who ever mitigated the up and down of the business swing and how they did it.

True enough Hitler had a certain strength against external attack—and beyond that it is probable, regardless of Stalingrad, that Hitler could have conquered Russia except for the help of ourselves and the fact that Britain had held fast at the Channel. But what was its background? He could enforce a 60-hour work week or longer had he wished. His unemployed were put to work making military equipment—and he tolerated no strikes, slowdowns, or jurisdictional disputes—and those resisting were put in concentration camps. But when the forces of freedom arrived, Hitler was doomed.

And Stalin certainly has no ups or downs—primarily because there are no ups—and that is true regardless of an endless succession of five year plans. That he had downs is attested by the millions who died in the famines since 1917. Even today the standard of living in Russia is lower than it was here at the depth of the depression—probably lower than it was at the depth of the



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Is that what we want?

Let us look at the very first foundation of security—safety of person, or as I put it—Safety, a Cornerstone of Security. We are all concerned with that—individually and collectively. We call for help to make our plants safer, to keep before us all the ideal of safety—to help us emulate the group of 89 who worked together for 29 years without a lost-time accident.

But when we strip the situation of all its obscuring features, who is responsible for safety? Why do we have safety programs, safety rallies, safety bulletins, safety speakers, etc., etc.?

All of those questions and others I haven't asked but which go with them have but one simple answer.

Safety is a matter of the individual! Torture it all you please—the individual is the key.

He—we—must be constantly reminded that the only safety we have and can control stems from our own safe practices.

To put it baldly—it is an individaul responsibility. That is of course in no sense a criticism of group programs. But it is reducing to simple language the bald fact that it isn't something that can be assured by passing a law—by government edict—by group resolution—or anything except the individual's own action based upon his determination always to act safely.

It is time we reached a conclusion. What is our moral?

Well—is it not clear that safety is truly a cornerstone of security? Can one ever be secure if faced with a lost arm—lost sight—or perhaps lost life?

Every security there may ever be is first predicated on personal physical safety—and that rests finally upon our own individual determination to be safe—it is our own individual responsibility.

If that is so—why is there any reason to believe that any other form of safety, security if you will, excepting always the state's protection against external aggression either individual or collective—I repeat, what basis is there for believing any other security in the long run can come except by individual determination and individual responsibility for one's own security?

I think it is quite clear that we could theoretically very materially increase safety in industry by "passing a law." Does that startle you?

Well, keep in mind I said only increase industrial safety, not efficiency, or lowering costs, just merely more closely approach absolute safety. Certainly no law or any other action can completely eliminate mechanical defects which result in accidental injuries. It is the human failure which I am discussing.

Most of you would agree, offhand, that this would eliminate many accidents due to human failure. But consider where it would be necessary to go from there. Where could you find supervisors capable or willing to put up with such a situation? Who would supervise the supervisors? Who could bear to work under such conditions? And, in such an atmosphere how could a workman grow in judgment and self-respect. Most of all, how far can you carry this sort of thing to eliminate (as nearly as possible) the human element, which carries the major responsibility for our accident records?

Obviously this is not freedom. And since individual safety is the basis for all security, the superstructure certainly must be governed by the same laws. To build that superstructure of security in the case of each individual requires that individual to have the same freedoms that he must have if he is to provide for his own safety.

Safety as practiced in the container plants*

G. J. BIENVENU
General Superintendent
Container Division
Gaylord Container Corp.

While I was in attendance at the last Safety Congress we had a fatality in our plant—the first in our history—so this qualifies me as an expert.

Some 12 or 15 years ago I had the privilege of addressing this group, and some of the points I talked about then I will repeat today, as I still think them sound and most of them are still in use in our Container plants.

It would seem to me that the best place to start would be at the beginning. All new employees are given a physical examination by our hospital doctors. This is a rather thorough physical examination, covering, among others, blood test, urine analysis, Wassermann test, check for color blindness, etc.; and only physically fit persons are employed.

After the prospective employees have passed their physical examination and have been inducted they are turned over to our safety engineer, who conducts a class once a week. Here he gives them a talk on general plant safety, goes over our safety rules, advises those employees who may have been employed for a specific job just what hazards they may encounter and how to safeguard themselves. At this meeting he shows several films on safety, on housekeeping, on horseplay, on safety at home, on safe handling of material; and since every job in the Container plant requires lifting at some time or another, he shows the correct way to lift using a "Lift-O-Graft" put out by the National Safety Council, which seems to do this job in fine fashion.

Since we run around the clock and have rotating shifts, we have to make arrangements to get the new employees off for these meetings, those who may be on the second or third shifts. We accomplish this by giving all new employees a card, which is presented to their foreman, announcing the date of the weekly meeting. The foreman keeps these cards before him at all times and when the new employee is put on the first shift, he is sent to the safety meeting—on company time. We find that this creates a very favorable impression on the new worker. He feels that he is going to work for a company that thinks enough of safety to place it first in his training and to pay him for attending safety meetings; and since first impressions are often lasting impressions, it is good business that the first impression be a good one.

After the new employee has been turned over to the foreman he is assigned to a job and is ready for training. Here lies the success or failure of most safety programs. If the man is not properly trained or properly instructed as to what hazards he may encounter, he is prone to become an accident

(*) Abridged from a paper read in the Pulp and Paper Section of the 38th annual National Safety Congress, held in Chicago October 16-20.

case. The first thing that the instructor does is to go over the hazards to be encountered on the job. We have always felt that the best way to reduce hazards, and thereby accidents, is to know that the hazards exist and then plan on the best way to eliminate them or guard against them. Mechanical guards can be put up very easily, but the real job by far is not mechanical guarding but mental guarding. An adequate safety plan for proper needs on safe practices and performances on all jobs, on all machines, in all departments, is absolutely essential.

In order to locate the hazards that may be encountered on any given job, we had to hold a series of meetings with the old operators and their helpers, with the safety engineer and his committeemen, together with the foreman and superintendent. From these meetings, we were able to draft a list of these hazards, and since the worker played a part in making up the list, they were very interested and it was a stimulus to our safety program. These lists were made up and are now being used by the instructor to point out to the new employees the hazards to be encountered on the new job.

So far I have just dealt with new employees. The lists of hazards are also used on all employees who are promoted to a new job, either by the instructor or by the foreman. The foreman also uses these sheets as a check sheet from time to time and reviews them with old personnel as well as new. At other times, it is used to check the instructor, and finally by the safety engineer to see if the job of safety is being properly covered either in training or after they have passed the training period.

We have been using safety committees for the past ten years and we are now thinking of changing to some other means of inspection. While the committee is still functioning and doing a fair job, we feel a change is needed—as such changes always renew interest. At the start of the safety committee we had the local union appoint the committeemen as they all work under an agreement which starts off by saying "that the said agreement was to cover the operation of the plant under methods that will promote to the fullest extent safety to employee, economy of operation, quality and quantity of output, cleanliness of plant and premises, etc., etc.," which is probably in most contracts; actually they are vitally interested in the safety of their members and the working conditions of the plant. We had hoped to create more union activity and participation in our safety program through this medium, and actually had some very good results when we first started off; however, when we found the interest lagging and the appointments becoming somewhat political, we started to appoint our own safety committeemen. Very often we appointed an accident prone employee as a committeeman and in most instances this made a safe worker of such an employee. We have safety committee meetings once a week and inspection by the committeemen every other week. All recommendations that are made, and approved, are given preference over all but pressing maintenance. Very often we approve such recommendations, such as guards the need for which may seem questionable, rather than pour cold water on some committeeman's enthusiasm. Of course, the safety engineer can and does stop most of the recommendations in the meeting if such recommendations seem unnecessary; however, he does not always have all the answers, or it may be a good policy to let the recommendation come through. In the event one comes through and is then turned down, the reason is given and reported back to the committee. These committeemen are paid for all time while spent on such activities. We use our bulletin boards and posters, as well as various services such as payroll enclosures, supervisory booklets on safety.

Accidents are reviewed, near accidents studied, new equipment discussed as to hazards and guards, housekeeping, working conditions, employee training, employee attitude, new employee attitude, and various other topics. Our supervisory forces are sold on safety, and most of them buy it, and those of them who don't think they do. By this, I mean that if you were to ask our supervisors what their duties were, they would list safety as one of their first responsibilities. However, there are a few, who when pressed for production, are prone to overlook a short cut or an unsafe practice if such was to speed up production, instead of capitalizing on that marvelous opportunity to call it to the attention of the worker at the time he performs the unsafe act. This, we think, is most impressive to a worker to have his foreman, who he knows

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is in a rush for production, still think enough of safety to stop an unsafe act and talk to him about such an act, and the correct way of doing it, even though he is losing production while such conversation takes place. It's bound to be impressive—it's bound to create in the worker's mind that safety comes first. I say we lose a marvelous opportunity of impressing our worker by not taking advantage of such an opportunity of impressing our worker by correcting the unsafe practice when it is going on, or at the time it happened. Some foremen are prone to overlook it entirely, or make a mental note and then when it will not interfere too much with production, tell the man about something he did wrong two days ago or several hours back. We are continually working on this and I feel we are making headway. I only mention the above to caution you on the possibility of some supervisors merely giving the safety program lip service.

We have first aid rooms equipped with all that is necessary for first aid accident cases; however, we own and operate a 150 bed hospital and most of our accident cases are sent there.

We have no plant nurse. The first aid room is supervised by the personnel office in the daytime and by the supervisory force at night. All our supervisors, or assistant supervisors, are qualified as being able to take care of first aid cases, having attended first aid classes and passed first aid tests. Some of our other plants have nurses in charge of the first aid room and I think they do a much better job of reporting accidents, keeping the first aid room properly stocked, and generally assisting the safety engineers, but with our hospital being operated within five minutes of our plant, we do not feel that we have the need for a nurse.

We also have contests of various kinds by departments, as well as with other plants. We have safety entertainment and get-togethers, suppers, banquets and picnics as a reward for high achievement of a good record. We have had talks by safety engineers, those connected with our insurance carrier, as well as some outsiders. We feel that all contests like these should be changed from time to time; if not, they are taken for granted and become only statistical records referred to by the manager and measured by the safety engineer. It should be the safety engineer's responsibility to know his people and to be able to gauge their interests and to tell when some plan has served its usefulness, and he should have a new plan ready to submit to management for approval.

Any employee who is out sick or off duty due to an accident for more than thirty days has to go through a physical re-examination before returning to work. Any defects that show up are called to his attention and every means are used to help this employee correct these difficulties. Often his job is changed temporarily or permanently. Money is advanced or arrangements made to hold money out of his check for glasses, teeth, etc.

Safety shoes are sold at cost to our employees, and while they are not compulsory, we make every effort to sell our employees on the advisability of using safety shoes, especially those who have such jobs that may endanger their toes; such jobs as truckers, core up men on the corrugator and paster, car loaders in the shipping department, machine tenders in the bag factory, maintenance crew, girls working in our finishing department, especially those who work around flats or lift tables. Goggles, dust masks, respirators, are also used. We have had quite a few eye accidents to our crane men in our warehouse, mostly foreign bodies in eyes, either dust or particles of steel that would chip off the crane rails. We have made it compulsory to wear goggles while on the cranes.

I would like to relate what happened to me—I tried to write this speech several times and was interrupted so often that I decided to go back one night and put it together. That night I found out, among other things, that an accident is only an accident when it hurts. When I had finished writing my notes and was on my way out of the time office, I glanced through the glass door and almost fell out at what I saw. There was a colored employee limping down the aisle with a 1 x 4 board about six feet long as a crutch. I recognized him as an old employee who was employed as a trucker. I called him in and asked him what happened. He told me he dropped a platform on his foot, and while it did not hurt at first, it got worse and he asked to go home. First, I asked him how he came to drop a flat on his foot as he was an old hand

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ORISKANY, N. Y.

on the job; in fact, he had held that job for five years. He told me he had dropped flats on his feet all the time. I then asked him if he reported it to his foreman, and he told me "no." When asked if he did not know it was a company rule to report accidents, he told me sure he knew, but these were not accidents because he never hurt himself. It is only an accident when you hurt yourself.

I then asked why he was using a board instead of a crutch. He told me the foreman offered him a crutch out of the first aid room but he refused as he didn't think it was necessary, but after he had left and was going through the plant he thought better of it and decided to use the board, especially as he needed such a board at home, and he figured the watchman would allow him to pass through the gate.

Remember that the big job is to educate the worker to mentally safeguard himself at all times. They must be sold safety not annually or semi-annually or periodically, but 60 minutes of every hour.

Experiences in development of coated board*

HARRISON KINDIG
Coating Superintendent
Mac Sim Bar Paper Co.

About four years ago, the company with which I am associated decided to coat paperboard on the machine; and, for that purpose, installed two Champion coating units on its No. 2 machine.

The Champion unit is a knife coater; in its operation, an excess of coating is applied to the sheet by means of a kiss roll, and the excess coating then removed by a doctor blade.

The No. 2 machine has eight cylinders, 162 dryers stacked five high, and trims about 129 inches. In the original installation, one coating unit was placed just ahead of the 62nd dryer; the other, just ahead of the 82nd dryer.

After the coaters and necessary mixing equipment had been installed and made as nearly ready for operation as possible by a group of uninitiated, J. R. Simpson of the Champion Paper & Fibre Co., Hamilton, Ohio, arrived at the mill to show the mill staff how to use them. His instructions were really needed. Not one person at the plant had had any previous experience with the coating business in any form. Although this lack of experience left a good many things to be learned, it also meant that we, at least, had nothing to unlearn.

Under Mr. Simpson's direction, we first went down to the mixing room and made the first batch of coating color. The apparent simplicity of this process was a surprise to us. It wasn't until months later that we realized how lucky we must have been during the first few weeks.

After the coating color was prepared, and pronounced usable by Mr. Simpson, we returned to the machine room and proceeded to operate the coaters for the first time. First, we coated with one coater alone; then, with the other alone; and, finally, with both coaters.

The results of these first three trials were very gratifying. Although the coat weight achieved was too light (due to a very low solids coating color), we had very good indications that the coaters were capable of giving us a good sheet of coated board.

During the first two or three hours of the initial run, we had several bad dryer breaks. Each of these breaks was explained away by blaming it on one thing or another; and no particular significance was attached to any one of them.

With the exception of these breaks, we had practically no trouble with the first run. Of course, we did find a great many little things about our mixing equipment that were awkward and needed changing. The next few days were spent in making these changes before trying to coat a second time.

Now began a long series of trial runs. These runs soon made it apparent that the trouble we had had with dryer breaks on the first run were not coincidental, rather that in some way they were caused by the coating operation.

Each time we started to use the coaters, we would have the same trouble. Either the sheet would cockle, or the draws would be pulled up so tight that we would be bothered with dryer breaks. The trouble was soon traced to the second coating unit, the unit nearer the dry end of the machine. We found that we could operate the first unit alone without trouble; but that we could not operate the second unit, either with the first unit, or alone, without dryer breaks. Although this problem had not been foreseen, the answer was quite easily found.

As all papermakers know, there is a stage in the drying of paperboard when the paper takes on a rather dappled appearance, there being relatively dark patches scattered all over the web. These dark patches are a little wetter than the lighter areas surrounding them. Now, if the draws are not sufficiently snug, the drier areas will shrink enough to dish the wet patches and thus cockle the sheet. Of course, the greater the variation in moisture content, the greater the tendency toward cockling and the tighter the draw must be to overcome this tendency.

The second coating head was placed right in that section of dryers where the sheet was in this dappled condition. When the coating unit was placed in operation, the wet patches of the sheet readily absorbed moisture from the coating applied and thus became wetter. The relatively dry areas also absorbed some moisture, but not nearly as much as did the wet patches. This difference in absorptivity created a much greater variation in the moisture content of the board than before. Consequently there was a much greater tendency toward cockling; and a much tighter draw was required to prevent it. This tighter draw, in turn, was the cause of a great number of dryer breaks.

In order to get away from this trouble, we moved the second coater from a position of twenty dryers *beyond* the first unit, to a similar position twenty dryers *ahead* of the first unit. This shift, in effect, moved both coating units twenty dryers nearer the wet end; and, while it eliminated the dryer breaks, it introduced a new problem.

The new second unit (formerly the first

(*) Abridged from a paper read before the 31st annual convention of The American Pulp and Paper Mill Superintendents Association, Inc., held at the Edgewater Beach hotel, Chicago, June 8-10.

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unit) continued to work satisfactorily. The first unit, however, was so close to the wet end that it scraped off fibers from the top liner of the board. Enough fiber was scraped from the sheet in a short time to plug the screen in the coating return system. This fiber did not noticeably damage the coated board, but it was quite a bother to the coating operator. Because of it, he had to change screens several times during a shift.

Using a slightly wider wiper blade proved to be all that was needed to overcome the difficulty. At the same time, the wider blade seemed to give us a slightly greater coat weight.

Coincident with these problems, we had two other problems of note. One of these problems involved the preparation of the casein adhesive.

A large rubbery mass of casein, containing many lumps of dry soda ash, always remained in the bottom of the cooker when the casein was dumped into the pigment slurry.

We tried the use of a soda ash solution instead of dry soda ash, and this procedure worked very well. We continued to cut our casein this way until just recently, when we found that by using more water to start with, we could add the dry soda ash without much trouble.

The second problem concerned the supplying of coating color to the coaters. Originally, we installed a centrifugal pump to deliver the coating color to the machine, and placed the coating supply tanks in the mixing room some two hundred feet from the coating units and eighteen feet below.

This arrangement did not ordinarily cause any trouble. However, if the coating happened to foam a little, the pump would air-bind periodically and fail to pump the coating to the machine.

We first thought that it would be enough to move the supply tanks and pump to the machine room basement directly under the coaters. After a trial with this set-up, it was decided that a positive displacement pump was required. A Moyno pump was installed.

To insure the safety of the pump and piping, we built a standpipe from the pump outlet to the top of the dryer frame and back to the supply tank. The coating color was tapped off this line and piped to the coating heads.

With the standpipe in the system, it was impossible to damage the pump. The system appeared to be ideal the first time we tried it. Soon we found that the standpipe, under certain conditions, would syphon the coating color right out of the coaters.

Putting a vent at the top of the standpipe eliminated syphoning; and, with the vent, the system was used very successfully until just recently. Then it was replaced with another system which works no better but requires much less pipe. Therefore, it is easier to keep clean.

On the more recent installation, we simply ran a small bleeder line from the pump outlet to the supply tank. This bleeder has no valve and is large enough to handle the full volume of the pump. At the same time, it is small enough to maintain a sufficiently high pressure to send the coating to the coating heads.

Following these initial problems, things have settled down to a more or less steady but natural progression of minor problems of one kind or another.

We were not long in finding out what happened when a slack tail was allowed to pass over the coater with the coating roll turning. Of course, we also soon discovered that it is quite a job to scrape the dryers afterwards.

We also found that the coating must not be allowed to get on the deckle edge of the sheet. If it does, it will build up a ridge on the dryers, which will cause the sheet to crack off. The sheet will continue to crack off until the ridge is removed.

We found out about streaks, and what can be done to stop them. More and more, we came to realize the importance of having a good finish on the board to be coated, if we wanted to end up with a good coating job. We also found ways and means to build up the solids in our coating color to get a greater coat weight.

The most recent problem we have encountered has been with titanium dioxide. In the past few months, we have found a noticeable amount settling out on the bottoms of the tanks and showing up on the screens. This difficulty has been traced to many causes, each cause affecting the mix slightly. After a general improvement of our procedure, involving more careful control and more attention to details, the difficulty was eliminated and we have experienced no recurrence of it.

The Paper Industry New Products

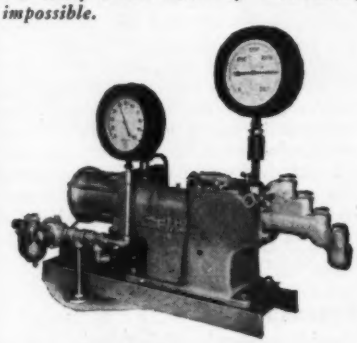
Abraser

Tests abrasion resistance of solid materials and coated surfaces.

This new abraser incorporates the rotary rub-wear action of dual abrading wheels: the right rubbing the specimen from the center outward and the left rubbing the specimen from the outside toward the center. It features large ball bearings, a capacitor type motor with heavy duty worm-gear drive, extra powerful vacuum unit with dual suction nozzle, and electric counter for registering the wear cycles. Both qualitative and quantitative wear results are obtainable with this model. Various types of holders for different kinds of specimens are available, such as the rimmed specimen holder, the flat-top holder, and the multiple specimen holder. Taber Instrument Corp., 111-PE Goundry St., North Tonawanda, N. Y.

Test Pump

No relief valves necessary—overloading impossible.



This new *aiROYmetric* hydrostatic test pump is a self-contained unit that can be operated upon connection of the air supply. The definite relationship between the areas of the air piston and pump plunger automatically balances the air pressure against the required hydraulic pressure. Trip valves which actuate the air piston, are the only controls used. It is applicable for testing boilers, pressure vessels, pipe and piping systems, chambers and dryers, and for calibrating and testing pressure gauges at pressures up to 25,000 psi. Milton Roy Co., 1300 E. Mermaid Lane, Philadelphia 18, Pa.

Gearshift Drive

Designed for machinery that requires low range of selective operating speeds.

Designated the Type R3AC, this new gearshift drive incorporates both primary and secondary gear reductions and can therefore be used in machinery of various types that require a low range of selective operating speeds, combined with high radial load capacity. The Type R3AC is a compact combination of a 5 hp. 1200 rpm integrally mounted electric motor and a four-speed sliding gear transmission, having selective primary gear ratios, and a secondary gear train with different optional ratios. It is approximately 31 inches in length, 12 inches in height and 18 inches in width, including gearshift lever. The Lima Electric Motor Co., Dept. AD 7, Lima, Ohio.

Compression Packer

Up to 180 consumer units packed in containers per minute.

Cycling at a top speed of 15 shipping containers a minute, the production of two or three packing machines can be fed into this machine direct from the packing lines. Different size packages can be handled with only a slight mechanical adjustment of the machine. Interchangeable duckbills make it possible to package rectilinear cartons or round cornered bags. With this new machine shipping container size can be reduced, which means substantial savings in container cost. It compresses units so that their combined structural and columnar strength provide resistance to crushing. Union Bag & Paper Corp., 233 Broadway, New York 7, N.Y.

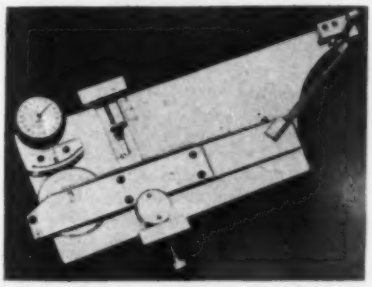
Leather Belt

Eliminates slipping.

This new flat leather belt has a controlled stretch that prevents permanent elongation of the belt under load. It is reinforced with synthetic cords placed between the leather plys by a special process. These cords provide the added resiliency necessary to prevent the leather from stretching beyond a certain point under load and to return the belt to its true length when not under load. The waterproof belt is now available in widths up to 24 inches, and can be obtained endless or with laps prepared. S. R. Sikes Co., Dept. PI, 1028 So. Third St., Minneapolis 15, Minn.

Knife Setting Gauge

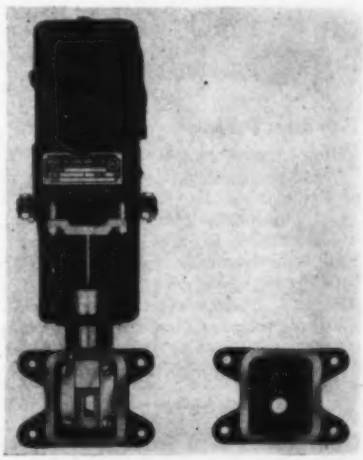
Overcomes deficiencies in knife edges, scoring, and loss of time.



This new instrument is the first knife pressure gauge to be made available to converters. It permits the use of knives varying in diameter up to ⅛ inch, and the gauge is set with the largest diameter knife to be used in the slitting set up. It overcomes mushrooms, cracked, and splintered knife edges, scoring of hardened steel sleeves, and the loss of time in haphazard methods of adjustment to slitter set ups. Compact in size, the gauge weighs approximately thirteen pounds. John Dusenbery Co., Inc., 271 Grove Ave., Verona, N.J.

Proportioning Valve

Features automatic control.



This new proportioning valve is designed for pipe lines and equipment handling fluids which require straight line proportional flow characteristics and minimum pressure drop and turbulence. Employing the design of a slide valve, the valve opening is rectangular in shape so that the slide or gate is moved over it; the flow is directly proportional to the open area. Thus the concentration of the opening for straight-

through flow eliminates unnecessary restrictions to flow or fluids. It is built for pipe openings from ¼-inch to 2-inches, and for pressure to 300 psi. The straight up-and-down valve motion is controlled by a stem which may be connected to a hand lever, hand wheel or to such automatic control mechanism as an air diaphragm operator. W. S. Rockwell Co., 200 Eliot St., Fairfield, Conn.

Heater

Delivers one million Btu's per hour.

To answer the need for single large unit heater where a multiple smaller installation is impractical, this new heater has been announced. THERMOBLOC Model 1000 is a little over twice the size of its predecessor, taking up floor area 44 by 70 inches. A number of louvered outlets around the top of the unit provide an even 360 deg. distribution of low velocity, heated air. The design permits its use in summer as a circulator of cool air drawn from the floor level and discharged at working level. The Pratt-Daniel Corp., East Port Chester, Conn.

Speed Indicating Instruments

No timing or calculating needed.

Two instruments are announced, one the "O-Z Improved Hand Tachometer" for indicating speeds at a glance, and the other the "O-Z Improved Hand Tachograph" for recording speeds on a travelling paper strip. Both are developments of older models manufactured by this company, and both are accurate to within 0.5 per cent at any point of scales. Measurable error due to side friction is said to be eliminated. Ball bearing mechanism and rotating gear shift are featured. The instruments can be used for measuring the rpm (right or left rotation) of revolving objects such as shafts or spindles, the surface speed of travelling objects such as flywheels or belts, speed variations during a revolution, and belt slippage. Each is made in three speed ranges. O. Zernickow Co., 15 Park Row, New York 7, N.Y.

Flexible Tubing

Resists chemical attack.

This new flexible tubing, made entirely of plastic, is available in sizes ranging from 1⅜ inches to 2½ inches. This larger bore was developed to meet a demand for a tough, translucent, nontoxic hose for bulk handling of liquid food products, drugs, and chemicals. Its translucency permits quick, visual inspection of flow, facilitates spotting obstructions or foreign material, and simplifies cleaning procedures. U.S. Stoneware Co., Akron, Ohio.

Continuous Mill Gauge

Uses Isotopes from atomic pile to measure moving strip material.

This new instrument, called the Beta Ray Continuous Gauge, is non-contacting and will measure the thickness of materials which are wet, sticky, highly polished or soft. The gauge operates in conjunction with a standard meter and will indicate any deviation in the thickness of strip or sheet material such as paper, steel, tin plate, brass, textiles, and other compositions. It may be used with a standard recorder, and process control or alarm signal circuits may be installed to operate in conjunction with the gauge. Pratt & Whitney, Hartford, Conn.

Pump

Designed especially for economical, standardized quantity production.

The new IMO Series A313A pump is designed for pumping petroleum products and other light or viscous fluids in volumes to 85 gpm. against pressures up to 150 psi, as required for rotary and steam atomizing oil burners, oil transfer, lubrication, hydraulic systems and similar service. There are only three working parts—a power rotor and a pair of sealing or idler rotors which mesh with the power rotor. It is compact and will fit into small spaces, and all its parts are interchangeable. DeLaval Steam Turbine Co., Trenton 2, N.J.

Chemically Inert Diaphragm

Withstands materials which readily attack rubber.

These new diaphragms are for use only in valves which have been altered to permit the use of a backing sheet which cushions and protects the thermo-plastic diaphragm for longer service life. Valve bodies for use with this new diaphragm may be cast of corrosion resistant alloys or can be lined with glass, lead, rubber or other impervious linings to suit the operating conditions. Service conditions for the new diaphragms include pressures up to 100 psi, and temperatures that vary according to the material and pressure in the pipe line, with a maximum temperature recommendation of 225 F, at the lower pressures. The Grinnell Co., Inc., Providence 1, R.I.

Polymer Latices

Better flow-out and greater uniformity and covering power.

The new Glyceryl Ricinoleate S can be used as a wetting and penetrating agent so that the color on paper is more uniform and has greater covering power. This agent does not cause thickening of the dispersion. It is compatible with all the usual latices and plasticizers and actually tends to act as a stabilizer in these products. About 1 per cent Glyceryl Ricinoleate S, based on the weight of the dry pigment, is generally used. This can be added to the plasticizer, if one is used, or added directly to the pigment paste. Glyco Products Co., Inc., 26 Court St., Brooklyn 2, N.Y.

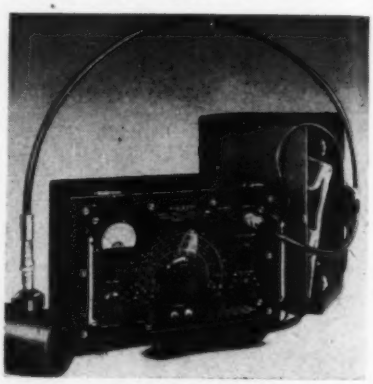
Adjustable Speed Motor

Eliminates use of expensive equipment for fixed pre-set speed.

This new motor enables a predetermined speed to be set manually by a knob either directly on the ACA motor or at the end of a flexible cable 10 or 15 feet away. The speed adjustment can be made while the motor is at standstill or while it is running. Speed control is obtained by rotating brushes around the commutator. The new mechanism actuates a pilot motor which drives the brushes to a position corresponding to the setting of the speed adjustment knob. A stop or automatic slow-down returns the brushes to the lowest speed position corresponding to the setting of the speed adjustment knob. A stop or automatic slow-down returns the brushes to the lowest speed position without disturbing the original setting. When the ACA motor is restarted, the brushes again come back to the pre-selected speed without any attention from the operator. General Electric Co., Schenectady 3, N.Y.

Thickness Tester

Portable and battery operated.



This new "Audigage" Thickness Tester is for non-destructive testing of digesters and other equipment. It measures the thickness of a vessel or pipe from one side by determining the frequency at which resonance of an ultrasonic wave occurs. Sulphate digesters are usually measured from the inside, and internally lined vessels can be checked from the outside. Because liquids, scale, and temperature changes do not cause any error, equipment in operation may be checked. Branson Instruments, Inc., 436 Fairfield Ave., Stamford, Conn.

Steel Strapping Dispenser

Can be used in either vertical or horizontal position.

Chief among the features of this new steel strapping dispenser is the new "Straptroller" which keeps the flow of strapping under control at all times, without backlash, and without interference from too much slack. An easy pull feeds strap smoothly without drag or sudden stoppages. The dispenser cannot roll in the direction of the pull of the strap, because the strap is dispensed at right angles to the wheels. Still another feature is the ease with which the full reels of strapping can be loaded in the dispenser. This job is done with the dispenser lying down. Only the hub cap and top disk need be removed for loading. Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47, Ill.

Vaneaxial Fans

Provide a smooth, efficient, axial flow of air.

Designed for ductwork applications, these new vaneaxial fans permit series or straight-through connections for all air-moving requirements. They operate on a low horse power input, and possess the ability to work quietly over a wide pressure range. Air loss ordinarily resulting from turbulence is converted to pressure, surface friction loss in

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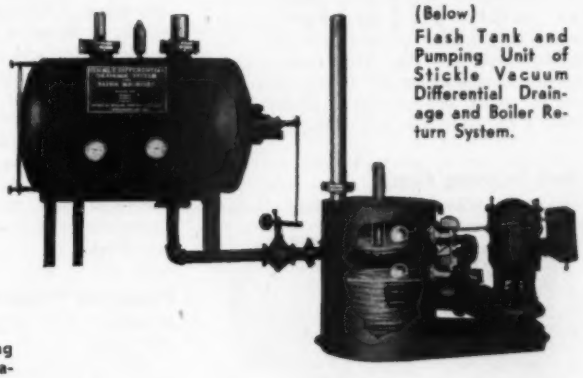
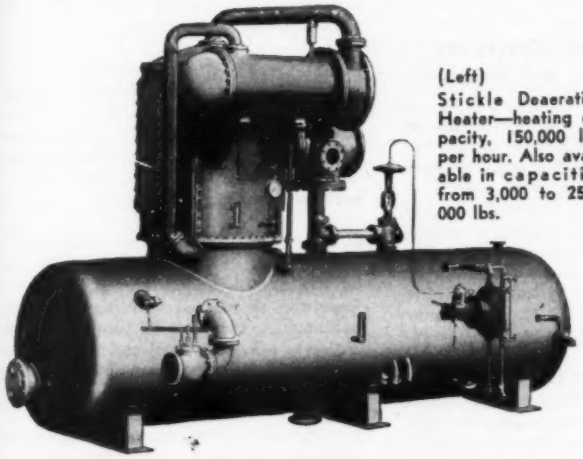


(Below)
Flash Tank and Pumping Unit of Stickle Vacuum Differential Drainage and Boiler Return System.



(Left)
Stickle Deaerating Heater—heating capacity, 150,000 lbs. per hour. Also available in capacities from 3,000 to 250,000 lbs.

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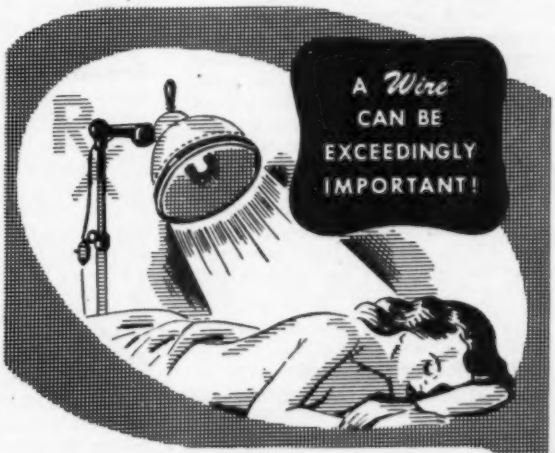

The great strides made by therapy in recent years have been due in no small measure to the development of possibilities in heat and light, notably red and violet. In these advances wires countless but inconsiderable in themselves have played a stellar role. Likewise, thorough-going care with reference to every strand of wire is indispensable to the manufacture of quality Fourdrinier wire cloth.

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the ductwork is reduced, and operating noise level of the fan is lowered. Easily installed in standard 20-inch and 24-inch diameter duct systems, the units are equipped with open-ventilated, ball bearing, 40 C. rise, standard NEMA foot-mounted motors. They are available in two styles—one for use where only non-hazardous air and fumes are encountered, and the other applicable if corrosive or inflammable fumes, dusts, or vapors must be considered. Robbins & Myers, Inc., Springfield 99, Ohio.

Self-Priming Pump

All valves eliminated by unusual design.

This new line of self-priming pumps has many advantages among which are the following: positive self-priming, no large and bulky priming reservoir, no recirculation of water during pumping stage, and efficiencies comparable to standard centrifugal pumps. It is made in sizes from ¼ hp. to 5 hp., open and closed impellers. Capacities to 120 gpm. and heads to 135 feet depending on capacity. Suction lifts up to 25 feet. Goulds Pumps, Inc., Seneca Falls, N.Y.

Hydraulic Truck

Specializes in carrying materials on spools.

Cable reels, paper rolls and other materials on spools can be transported and positioned with this new hydraulic truck. One model of this truck which has been used with small cable reels has a capacity of 300 lbs. The opening between the base forks and elevating forks is 15 inches and the elevating forks lower to 14 inches and elevate to 28 inches. A single speed hydraulic hand pump and hydraulic cylinder actuate the lifting mechanism. It is equipped with two 5 inch swivel casters and two 5 inch rigid casters. Lyon-Raymond Corp., 8074 Madison St., Greene, N.Y.

Weight Recording Unit

Increases accuracy in recording of scale weights.

The new TELEPRINT combines electronic, electrical and mechanical engineering to "read" the scale dial and convert it to weight-printings set up on type wheels for impression on a wide variety of tickets and forms and single and double roll tapes. Three components make up the TELEPRINT—a take-off unit, mounted as a part of the dial housing; a servo-amplifier and a recorder unit, remotely connected to the take-off by cable. The translation of weight from dial to weight printing is accomplished with a high degree of accuracy. Also with the take-off and recorder mechanisms designed as separate units, the TELEPRINT Recorder may be located 500 or more feet away from the scale site with only the addition of extra cable. The Howe Scale Co., Rutland, Vt.

Featherweight Tractor

Smallest rider-type tractor yet engineered.

This new tractor, weighing only 1510 pounds, can tow loads as heavy as 10 tons. It is battery operated, and can develop ultimate drawbar pull of as much as a thousand pounds. It measures only 30 inches at the broadest point, and is only 45 inches long. It features full magnetic contactor control, large, paddedd seat for the operator, and can be turned in just a little more than its length. To allow satisfactory service in a variety of conditions, the featherweight unit has been built to use cushion type, solid, or pneumatic tires equally well. Automatic Transportation Co., 149 W. 87th St., Chicago 19, Ill.

Program Recorder-Controller

Eliminates cam-cutting—uses interchangeable parts.

This new controller has a standard set of cams which can easily be set to the conditions required, and just as easily changed when necessary. It is thereby possible to change the rate rise, the length of hold, and the holding temperature or pressure without cutting a cam for each cycle or going to the trouble of removing or inserting different cams. It has a 9-inch chart and is housed in a standard 12-inch case. The temperature and pressure systems are interchangeable without the delay of returning the instrument to the factory. It can be modified to control two variables at one time, to include automatic reset after completion of a cycle, and to provide for the addition of signalling devices. Gotham Instruments Division of American Machine & Metals, Inc., 149 Wooster St., New York 12, N.Y.

Gravure Microscope

Permits more accurate control of gravure printing and plate making processes.

This new instrument incorporates a microscope optical system equipped with special measuring devices which provide readings of the depth and width of gravure plate cells. It may be used in controlling quality of etching in addition to adjusting ink consistency to plate wear. This light, compact instrument may be placed directly on gravure rolls 4 inches or larger—either on or off the press. Depth measurements are made at a magnification of 600 times by focusing the microscope on the bottom of the cell and setting the graduated micrometer fine adjustment knob to zero. It has a built-in illuminator and a swing-out magnifier. American Optical Co., Instrument Division, Buffalo 15, N.Y.

New Product Briefs . . .

▶ INDUCTION MOTORS—The standard line of bracket-bearing, squirrel-cage induction motors of four and more poles has been redesigned to provide more protection and greater accessibility. Available with special electrical modifications to suit application requirements. Allis-Chalmers Mfg. Co., Milwaukee, Wis.

▶ FRACTIONAL SPEED REDUCER—This new Heliocentric unit, designed to save cost and conserve space in all in-line reducer applications in the ¼ to 1 hp. range, is suitable for any straight-line installation in which the input rpm does not exceed 1800. Known as Model 5-E. Universal Gear Corp., 19th and Martindale, Indianapolis 7, Ind.

▶ DRILL KIT—The "S-17" utility drill comes in a carrying case with complete drill accessories, including a 14-in. drill steel and three sizes of rock bits, a star drill adapter, and 25 ft. of air hose. A self-rotating pneumatic hammer drill that weighs only 19 lb. Gardner-Denver Co., Quincy, Ill.

▶ STATIC LOCATER—To detect electrically charged areas, this portable instrument can be used at full sensitivity for general area inspection or reduced sensitivity for close examination. Power is self-contained, consisting of a flashlight cell and mercury type batteries. Specialties, Inc., Skunks Misery Rd., Syosset, L.I., N.Y.

▶ LUBRICANT PUMP—An air-operated high pressure pump in three models, to deliver lubricant from 25, 35 or 50 lb. containers. Known as the "711," the pump has a new sealed-in air motor which requires no oiling and has an exclusive centered-valve design. Alemite Division, Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14.

▶ LIQUID SAMPLE COOLER—For cooling boiler and boiler feedwater samples in controlling chemical and refinery processes and general laboratory use. It is a shell and tubular coil type heat exchanger of stainless steel welded construction. Capacities of ¼ and ½ gpm. Worthington Pump and Machinery Corp., Harrison, N.J.

▶ AIR CIRCULATOR—The "Radiant Air Wave Circulator" propels two beams of air, one in a fast-moving, tight spiral, the other in a larger, slow-moving spiral. The result is a differential in pressure which sets all air in the room pulsating. A Grand Award Winner in the electrical appliance field. Roto-Beam, Chicago 39, Ill.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946
(Title 39, United States Code, Section 233)

Of THE PAPER INDUSTRY, published monthly at Mount Morris, Illinois, for October 1, 1950.

1. The names and addresses of the publisher, editor managing editor, and business managers are: Publisher, Fritz Publications, Inc., 59 E. Van Buren St., Chicago, Ill.; Editor, Bessie Merrithew, 59 E. Van Buren St., Chicago, Ill.; Editorial director, Richard W. Porter, 59 E. Van Buren St., Chicago, Ill.; Business manager, A. Scott Dowd, 59 E. Van Buren St., Chicago, Ill.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Fritz Publications, Inc., 59 E. Van Buren St., Chicago, Ill.; Mrs. Annie C. L. Fritz, 6801 South Crandon Avenue, Chicago, Ill.; Mr. A. Scott Dowd, 6801 South Crandon Avenue, Chicago, Ill.; Miss Abigail C. Bruce, 2446 Oak Park Avenue, Berwyn, Ill.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

A. SCOTT DOWD, Business Manager.

Sworn to and subscribed before me this 11th day of October, 1950. (SEAL)

GOLDIE L. SIMON, Notary Public. (My commission expires July 9, 1951.)

The Paper Industry New Literature

Books

THE MANUFACTURE OF CHEMI-GROUNDWOOD PULP FROM HARDWOOD. By C. Earl Libby and Frederic W. O'Neil. Published by New York State College of Forestry, Syracuse University, Syracuse, N. Y. 10½ x 8. 42 pages. $1.00.

This volume, a report of research done at the University in co-operation with the Empire State Paper Research Associates, Inc., traces the complete program carried out to discover a suitable method of producing pulp from hardwood. Such chapters as "Fundamental Studies of Liquor Penetration in Wood," "Exploratory Research," "Development of the Chemigroundwood Process for Hardwood Mechanical Pulp Manufacture," and "Cost Analysis" should give any papermaker handicapped by the shortage of pulp fundamental knowledge of a new method which may make other woods than those now commonly used for pulp available to the industry.

The book is extensively illustrated with 39 figures, 21 tables, and numerous photos showing equipment in use at the University. A complete bibliography of references used in the preparation of this report by Mr. Libby and Mr. O'Neil, professor and associate professor of pulp and paper manufacture respectively, and directors of the school project, is included.

ESL BIBLIOGRAPHY NO. SIX. Published by Engineering Societies Library, 29 West 39th St., New York 18, N. Y. $2.00

An annotated bibliography of 101 selected references to literature of the past 12 years concerning non-metallic bearings, the volume is concerned with all aspects of non-metallic bearings—their manufacture, design, properties, wear, lubrication, performance, testing and application. Bearings of rubber, wood, laminated phenolic plastics, resin-impregnated cotton fabrics, micarte and nylon are stressed in the book.

Among the applications of such bearings discussed are rolling mills and automatic presses.

FOREST DICTIONARY, Finnish-Swedish-German-English, and PAPER AND PULP MAKERS' DIRECTORY 1950-51. Published by A. B. Svensk Travaru-Tidning, Kungsgatan 17, Stockholm. The Dictionary, Sw. cr. 35; the Directory, Sw. cr. 20.

The forest dictionary, through cross-alphabetization, makes foreign translation of forestry and wood terms possible. One section of the volume gives precedence to Finnish words, with translations into the other three languages following; a second section lists translations in each language separately in alphabetical order, and gives a reference to proper identification of the term in the first section of the book. The book should be valuable to any papermaker whose work puts him in contact with mills in Finland, Sweden or Germany.

The Directory is an English edition of "Brusewitz Directory," and contains particulars about all woodpulp and paper mills in Sweden, Norway, Finland and Denmark; such information as address, names of directors and engineers, machinery with which the mill is equipped, and output of different types of pulp and paper. The Directory also contains classified registers of the productions and shipping marks of the mills included.

SALES AND BUSINESS FORECASTING IN CHEMICAL PROCESS INDUSTRIES. By Robert S. Aries and William Copulsky. Published by Chemonomics, Inc., 400 Madison Ave., New York 17, N. Y. 10 x 6½. 135 pages. $5.00.

This volume, written by the authors of the well-known "Marketing of Chemical Products," tells what sales and business forecasting is, with methods, advantages and specific application of forecasting—or planning scientifically for the future—in chemical process industries. Using specific chemical companies, as well as several authoritative government bureaus, as examples the book tells how the chemical manufacturer may predict trends, cycles and end-uses of his products.

Arranged in 12 chapters addressed to top management, engineers, personnel, treasurers, purchasers, sales men, manufacturing men, and investors, this book should be of interest not only to the manufacturer of chemicals but to those whose production depends upon the availability of certain chemicals in a competitive industrial market.

MANAGEMENT STRATEGY IN COLLECTIVE BARGAINING NEGOTIATIONS. By William J. Baade, assisted by Morris Stone. Published by National Foremen's Institute, Inc., New London, Conn. 198 pages. $5.00.

A practical working reference which gives employers and management negotiators little-known information on how to execute contracts which promote peaceful labor relations, yet permit efficient business operation, this book treats of its subject in six parts:

Part I, Why Unions Act as They Do; Part II, Union Management Relations and the Law; Part III, Basic Union Aims and Management Bargaining Strategy; Part IV, Safeguarding Management Rights; Part V, Conduct at the Bargaining Table; and the Appendix, which includes the text of the Taft-Hartley (labor relations) Act and a lengthy index on specimen contract clauses. Actual clauses used by operating firms in their labor agreements are included, with suggestions as to the selection of the right clause to fit particular agreements.

CATALOGUE AND HANDBOOK OF STANDARD EQUIPMENT FOR AUTOMATIC HEAT AND POWER INSTALLATIONS. Published by Preferred Utilities Manfacturing Corp., 1860 Broadway, New York. 160 pages. $2.50.

This practical volume, bound in Fabricord, is presented in three sections: (1) 28 pages concerning packaged steam generators, oil and gas burners, ranges, water heaters and other heavy equipment, (2) 98 pages of oil, gas and other accessories, oil line accessories, and (3) 34 pages of data for designers and installation men working with oil and gas fired heating, hot water, and power plants.

Booklets and Pamphlets

FOREST BIBLIOGRAPHIES. Published by American Forest Products Industries, 1319 Eighteenth St. N. W., Washington 25, D. C. One bibliography lists available booklets, posters, charts, filmstrips and motion pictures dealing with forestry; another lists teaching aids provided by individual forest industries and associations as well as by state forestry departments.

WORLD PRODUCTION AND DISTRIBUTION OF NEWSPRINT PAPER 1949. Published by Newsprint Service Bureau, 342 Madison Ave., New York 17, N. Y. 8½ x 11. 6 pages. This booklet is a compilation of reports from Foreign Service Officers throughout the world, and is prepared by the Newsprint Service Bureau in co-operation with the Forest Products Branch, Office of Industry and Commerce, U. S. Department of Commerce. The results of the fourth postwar survey of world newsprint production and distribution are presented in this booklet in both verbal and tabular form for easy comprehension of the important facts contained.

MARKET GUIDE FOR THE PHILIPPINES. Published by American Foreign Credit Underwriters Corp., 170 Broadway, New York. Credit and capital ratings of more than 2500 commercial and industrial firms in the Philippines are listed in this, the first postwar edition of the Guide. A trade classifier for selection of prospects in specific lines is included; other special features are a detailed study of the Philippine mar-

ket, principal imports and exports, products and manufacturers, and import and exchange regulations. Articles included are Agency and Licensing Agreements, Letters of Credit, Marine Insurance, Export Packing, and Sales and Export Terms.

LIST OF CLICHES AND MATRIXES FOR DRUPA 1951. Published by DRUPA, International Exposition of Printing and Paper, Nordwestdeutsche Ausstellungs-Gesellschaft, Duesseldorf, Ehrenhof 4, Germany. 8¼ x 12. 18 pages. Free. This booklet is a visual listing of the matrixes and other reproduction materials suitable for publicizing DRUPA which are available without charge from Exhibition headquarters.

MATERIALS SELECTION CHART. Published by Cooper Alloy Foundry Co., Hillside 5, N. J. 8½ x 11. 4 pages. Free. Designed to aid manufacturers in the selection of the most economical material satisfactory for resistance to corrosive media. Use of the chart leads to correct choice of the most economical material to use under any of 350 different corrosive conditions.

PSYCHOLOGY OF SAFETY IN OPERATION. National Safety Council, 425 No. Michigan Ave., Chicago 11, Ill. Set of six booklets, 90c per set in quantities of from one to nine, quantity discounts. Written for foremen and supervisors, these six booklets suggest hints for training employees in safe practices. "You Can't Change Human Nature" discusses common peculiarities of human nature, "What Is Your UQ" asks the supervisor how high his understanding quotient—or the ability to understand attitudes and reactions of his workers—is, "Teaching Safety on the Job" suggests training methods, "People Act Alike" concerns itself with basic human wants and their importance to the supervisor's relations with employees, "Safety Takes Teamwork" suggests methods whereby supervisors may make safety important to workers, and "You Are Human Too" gives supervisors advice in evaluating their own strengths and weaknesses.

"POWER-PACK" EXPENDABLE PALLETS AT WORK IN THE PAPER INDUSTRY. Published by Addison-Semmes Corp., 1810 Thurston Ave., Racine, Wis. 36 pages. This manual on the use of expendable, corrugated fiberboard pallets in shipping and storing of roll and sheet paper stock uses actual case histories of specific shipments to show the versatility and convenience of these pallets. Illustrations, diagrams, and sketches are included, as are comparisons between the cost of using the expendable pallet or the wood skid method.

MAINTENANCE PORTFOLIO. Published by Wilbur & Williams Co., Boston 15, Mass. This booklet analyzes maintenance problems of equipment and buildings, and makes suggestions for economical upkeep. Also included is a description of specialized paint coatings useful in resisting moisture, fire, mildew and chemicals.

PANORAMA OF LUBRICATION. Volume 1, No. 11. Published by Shell Oil Co., 50 W. 50 St., New York 20, N.Y. This 41 page booklet, amply illustrated in color, was prepared by the publishers to assist executives, engineers, salesmen and students in understanding what greases are, and how they are believed to act when lubricating. Each of the booklet's four chapters, "What Lubricating Grease Is," "How Grease Lubricates," "Factors That Influence Grease Characteristics," and "Application of Modern Lubricating Greases," is subdivided into appropriate sections for ease of understanding.

FOR YOUR OWN GOOD, FOR THE GOOD OF US ALL. Published by Science Research Associates, Inc., 228 So. Wabash Ave., Chicago 4, Ill. 60 pages. Pocket size. 75c. Planned for use with the Revere Safety Test, this book contains information on safety in general and in specific shop and plant situations. In the test referred to, a cartoon character represents the typical worker, doing each operation three different ways; the worker taking the test indicates in each case the picture which shows the breaking of a safety rule.

SUBJECT INDEX to technological documents issued in Volume 12 of the "Bibliography of Technical Reports." Published by United States Department of Commerce, Office of Technical Services, Washington, D. C. $1.00. The index enables researchers to locate reports on any subject carried by the "Bibliography" in the period of July to December, 1949. Similar indexes to Volumes 10 and 11 are available at the same price.

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Manufacturers' Publications

Through the co-operation of manufacturers and suppliers, THE PAPER INDUSTRY *lists the following catalogues, bulletins and booklets. They may be obtained without cost or obligation, unless otherwise specified, by writing direct to the manufacturers. Please address requests on your company letterhead.*

Flow Rate Meter. Fischer & Porter Co., Hatboro, Pa.—Catalogue section 25-E describes and illustrates in 24 pages the features of the series 700 Flowrater, available in three basic types. Catalogue section 40 covers the series 400 armored Flowraters, to be used where pressure differential between the fluid metered and the atmosphere is hazardous. Specific details of design, installation, maintenance, and ordering are given.

Centrifugal Castings. Electric Steel Foundry Co., 2141 N. W. 25th Ave., Portland 10, Ore.—The making of steel castings of symmetrical shapes, IPS pipe, tubes, and cylinders is told in a blow-by-blow account of the foundry at work. Finished products are pictured and applications suggested. Bulletin No. 184.

Molten Metal Spray. Metalweld, Inc., 26th and Hunting Park Ave., Philadelphia 29, Pa.—"Metallizing" is the title of this 4-page bulletin describing the molten metal spray process for making mechanical repairs and protecting surfaces. Illustrated to show method of use and applications.

Junior Insulation Testers. Associated Research, Inc., 3758 W. Belmont Ave., Chicago 18, Ill.—Bulletin 4A describes the complete line of "Hypot" Junior High Potential Insulation Testing Instruments, with ranges from 0-1500 to 0-6000 volts and capacities from 40 to 140 volt-amperes. Four pages, illustrated.

Gasoline-motor Vacuum Cleaner. U. S. Hoffman Machinery Corp., 105 4th Ave., New York 3, N.Y.—A 4-page bulletin, No. A-794, and a single sheet, No. A-803, specify all features and uses of this heavy-duty cleaner, to be used in areas where electricity is not available. This model is known as the "Hoffco-Vac No. 50."

Controlled Water Softening. General Filter Co., Affiliate of Layne & Bowler, Inc., Ames, Iowa.—An 8-page bulletin, "Applications of Hydrogen-Zeolite Softened Water," explains the principle of controlling alkalinity of treated water by blending affluents of acid-regenerated and salt-regenerated units. Applications are suggested.

Pipe and Fitting Liner. Saran Lined Pipe Co., Div. of Dow Chemical Co., 2415 Burdette Ave., Ferndale 20, Mich.—A new catalogue describes the use of Saran, a plastic, for lining steel pipe, fittings, and valves. Photographs and drawings are included.

Chemical Mixing Unit. American Well Works, Aurora, Ill.—Technical Supplement HM gives complete data on the "American Homomix," a rapid-mix unit for instantaneous blending of a liquid and chemicals or gases without the use of a mixing tank. Diagrams and photos show installations and construction.

Worm Gear Drives. Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.—An 80-page book, No. 2324, describes over 20 sizes and types of enclosed right-angle worm gear drives. Five pages of typical drive problems and their solutions are given.

pH Electrodes. Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.—Catalogue EN-85 lists the complete line of this company's *p*H electrodes and assemblies. It is designed to help users order replacement parts and accessories, and to guide new users in selecting the proper electrodes for their *p*H problems. 28 pages.

Heat Transfer Equipment. Patterson Foundry & Machine Co., East Liverpool, O.—A new 20-page catalogue, entitled "Process Applications of Heat Exchangers," describes the

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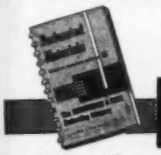

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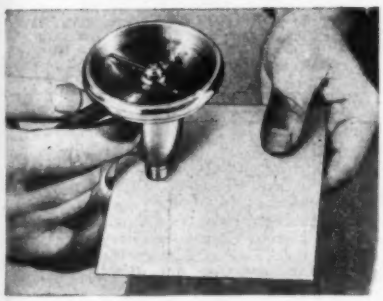

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Valves. Catawissa Valve & Fittings Co., Catawissa, Pa.—22-page catalogue No. 11 illustrates a complete line of Hot Forged Steel Unions and Valves and includes complete data, specifications as well as prices. It also features the standard and double extra heavy hot forged steel unions and orifice, male and female, lug not and full stainless steel and full alloy steel unions. Illustrated.

Research & Testing Facilities. Allis-Chalmers Mfg. Co., 991 S. 70th St., Milwaukee, Wis.—This new 32-page bulletin describes Allis-Chalmers basic industries' commercial research and testing facilities used in the fields of pulp and wood processing, minerals' beneficiation and comminution, grain and flour milling, and oil extraction. It carries a cross section of laboratory investigations conducted and of industries served. Profusely illustrated.

Alloy Castings. Michiana Products Corp., Michigan City, Ind.—Booklet 112 introduces the line of stainless steel castings and those of various heat-resistant, corrosion-resistant, and abrasion-resistant alloys made by this company. Descriptive data is in brief, readable form.

Electric Cranes. Northern Engineering Works, 2615 Atwater St., Detroit 7, Mich.—8-page illustrated Booklet G-700 shows a wide range of installations of overhead electric traveling cranes in paper mills, steel mills, power plants, metal fabricating plants and railroad yards, with names of representative users of this line of material handling equipment.

Screens. Patterson Foundry & Machine Co., East Liverpool, Ohio—24-page brochure describes this new line of screens for wet and dry separation of chemicals, plastic powders, crushed rock, abrasives, adhesives, soap powders, enamel slip and frit, and other types of production separation operations. Illustrated with charts, drawings and photographs.

Synthetic Resin. Nukem Products Corp., Buffalo 20, N.Y.—12-page booklet describes Nukemite, a new synthetic resin which is an acid and alkali resistant coating. It affords protection from severe corrosive conditions to metal, concrete and wood surfaces exposed to chemical attack. The resin film is leakproof, odorless and non-contaminating. Illustrated.

Pinch Valve. The Flexible Valve Corp., 521 Commercial Ave., Palisades Park, N.J.—16-page catalogue No. 455 gives complete data on a new line of natural and synthetic runner (Neoprene-Buna N-Buna S-Butyl) pinch type valves. It includes performance charts, photographs, and schematic drawings showing installations and typical uses.

Pumps. Waterous Co., 80 E. Fillmore Ave., St. Paul 1, Minn.—4 page bulletin P-332 describes a new line of sanitary pumps. Fully described are its mechanisms and running principles, its operation, and typical installations and uses. Illustrated with photographs and diagrams.

Turbine Pumps. The Deming Co., Salem, Ohio—20 page bulletin No. 4700 has large illustrations showing construction details, various types of drive and typical installations of deep well turbine pumps. Graphic portrayal of details is obtained by the use of color printing in construction views. Illustrated with charts, tables, drawings, and photographs.

Speed Control Drive. Allis-Chalmers Manufacturing Co., Milwaukee, Wis.—12-page Bulletin 20B7223A on the automatic Vari-Pitch drive, which provides instant variable speed on most speed changing needs from 1½ to 40 hp. The bulletin carries instructions and tables for figuring the components needed to assemble a drive for individual speed range and hp. requirements.

Slitters and Rewinders. Johnstone Engineering & Machine Co., Parkersburg, Pa.—2 single-sheet catalogue additions, Bulletins Nos. 550 and 650. No. 550 describes the Medium Duty Twelve slitter and rewinder, in sizes for rolls up to 62 in. wide. No. 650 describes the Heavy Duty Fourteen, for rolls up to 32 in., with 92-in. roll size made special.

Polyethylene Resin. Bakelite Division, Union Carbide and Carbon Corp., 300 Madison Ave., New York 17, N.Y.—24-page booklet, "Bakelite Polyethylene," summarizes the characteristics, development, and applications of Bakelite, including little-known industrial applications.

Derricks. American Hoist & Derrick Co., St. Paul 1, Minn.—"American Steel Derricks," a new 36-page catalogue, No. 200-D-3. Profusely illustrated, including outline drawings and construction details. One page is devoted to the correct method of determining boom length for lifting a required load. Catalogue covers the complete line of derricks, with capacities up to 250 tons.

Book and Magazine Trimmer. Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O.—A folder containing separate sheets in an inside pocket describing the Seybold Continuous Trimmer with Conveyor Feeder. These sheets carry photographs, diagrammatic drawings, production comparisons, floor plans and specifications.

Insulation Breakdown Testers. Associated Research, Inc., 3758 W. Belmont Ave., Chicago 18, Ill.—Bulletin 5A, 4 pages, describes and illustrates 13 models of "Hypot" high-potential insulation breakdown testers for testing on diesel-electric locomotives, motors, generators, and insulated power lines, and for dialectric strength testing of materials.

Viscosity Meter. Brookfield Engineering Laboratories, Inc., Stoughton, Mass.—A booklet on the Brookfield Synchro-lectric Viscometer, describing special features and uses in the laboratory and at the point of process for testing and controlling viscosity. A larger 8-page catalogue describing various models is also available.

Flow Regulator. Kates Company, 430 Waukegan Rd., Deerfield, Ill.—Bulletin No. 502, 4 pages, explains the operation of the Kates Direct Acting Flow Regulator. Specifications are given for regulators from 0.1 to 100 gpm, and the bulletin says larger units are available.

Rubber Putty. B. F. Goodrich Co., Akron, O.—A new catalogue section on "Plastikon" rubber putty for glazing and sealing, particularly where vibration, corrosion, or moisture exists. The single-sheet section gives directions for use and lists stock colors and grades.

Water-Cooled Couplings. Dynamatic Corporation, Kenosha, Wis.—16-page booklet describing basic principles, characteristics, applications, construction details, and operation of Dynamatic Eddy-Current Couplings for adjustable-speed drives. A partial list of applications shows a number of paper mill uses.

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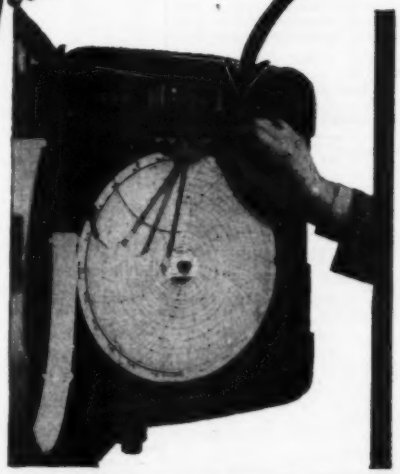

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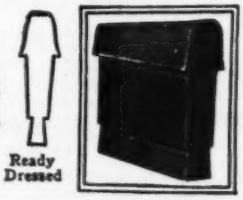

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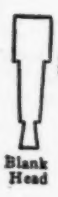

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Asarco Sheet Lead . . . All commercial weights and sizes. Chemical . . . Tellurium Chemical . . . Antimonial.

Asarco Lead Pipe . . . All commercial sizes. Special sizes on request. Chemical . . . Tellurium Chemical . . . Antimonial.

Asarco Lead and Lead Lined Valves . . . Split Type "Y" and "Angle", Standard "Y", Gate, Check, Hard Lead "Y", Plug and Seat.

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AMERICAN SMELTING AND REFINING COMPANY,
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HANCHETT MANUFACTURING CO. MAIN OFFICE—BIG RAPIDS, MICH. WEST COAST—PORTLAND, ORE.

WORLD'S LARGEST MANUFACTURERS OF SAW SHARPENING AND KNIFE GRINDING MACHINERY

MARKET QUOTATIONS

RAGS (Domestic)

NEW RAGS

Quotations to consuming mills, cents per pound or dollars per hundred pounds, f.o.b. New York, follow:

	per cwt.
Blue Overalls	11.50 to 12.00
Corduroy, Men's	5.25 to 5.50
Corduroy, Ladies'	5.25 to 5.50
Washables, No. 1	5.25 to 5.50
Percales	10.00 to 10.50
Light Prints, No. 1	8.00 to 8.50
Khaki Cuttings—	
Bleachable	7.50 to 8.00
Unbleachable	6.75 to 7.00
New White Canvas	16.50 to 17.00
Canton Flannels, Bleached	17.00 to 17.50
Canton Flannels, unbleached	14.50 to 15.00
Shirt Cuttings—	
New White No. 1	17.50 to 18.00
White Shrunk	16.50 to 17.00
Silesias No. 1	11.00 to 12.00
New Unbleached	17.50 to 18.00
Fancy	7.75 to 8.25
Linen Cuttings—	
American	10.50 to 11.00
White	18.00 to 18.50
Grey	17.50 to 18.00

RAGS (Domestic)

OLD RAGS

Quotations to consuming mills, dollars per hundred pounds, f.o.b. New York, follow:

	per cwt.
Roofing—	
No. 1	2.35 to 2.45
No. 2	2.25 to 2.35
No. 3 and 4	2.05 to 2.25
Twos and Blues—	
Repacked	2.85 to 3.00
Thirds and Blues—	
Repacked	2.60 to 2.75
Miscellaneous	2.25 to 2.40
Whites, No. 1—	
Repacked	5.00 to 5.25
Miscellaneous	3.75 to 4.00
White, No. 2—	
Repacked	3.75 to 4.00
Miscellaneous	3.25 to 3.50

RAGS (Foreign)

ex dock New York City

NEW RAGS

	per cwt.
New Dark Cuttings New Mixed Cuttings New Light Silesias Light Flannelettes Unbleached Cuttings New White Cuttings New Light Oxfords New Light Prints	Nominal

RAGS (Foreign)

ex dock New York City

OLD RAGS

	per cwt.
No. 1 White Linens No. 2 White Linens No. 3 White Linens No. 4 White Linens No. 1 White Cottons No. 2 White Cottons No. 3 White Cottons No. 4 White Cottons Extra Light Prints Ord. Light Prints Med. Light Prints Dutch Blue Cottons French Blue Cottons French Blue Linens Checks and Blues Linsey Garments Dark Cottons Old Shopperies	Nominal

ROPE and BAGGING

f.o.b. and ex dock New York City

	per cwt.
Gunny No. 1—	
Foreign	7.00 to 7.50
Domestic	8.00 to 8.50
Wool Tares—	
Light	7.00 to 7.50
Heavy	7.50 to 8.00
No. 1 Scrap Bagging	7.00 to 7.50
Manila Rope—	
No. 1 large	6.50 to 7.00
No. 1 small	5.50 to 6.00
Sisal Rope—	
No. 1 large	6.00 to 6.50
No. 1 small	5.50 to 6.00
New Burlap Cuttings	7.50 to 8.00
Jute Threads—	
Foreign (Nom.)	7.50 to 8.00
Domestic	7.50 to 8.00
Strings—	
No. 1 sisal	5.50 to 5.75
No. 2 sisal	5.00 to 5.25
Soft jute	5.25 to 5.50
Mixed	3.50 to 3.75

WASTE PAPER

The following are quotations, dollars per ton, for No. 1 packing f.o.b. New York:

Shavings—	per ton
Hard White Env. Cuts	175.00—
Hard White, No. 1	150.00—
Soft White No. 1	125.00 to 135.00
Soft White, one-cut	145.00 to 150.00
Soft White, Misc.	110.00 to 120.00
Fly Leaf, No. 1	55.00 to 60.00
Fly Leaf, Woody No. 1	50.00 to 55.00
No. 2 Mixed Col. Woody	40.00 to 45.00
Flat Stock—	
No. 1 Heavy Books and Magazines, Repacked	33.00 to 35.00
Mixed Books	20.00 to 22.50
Ledger Stock—	
No. 1 White	90.00 to 100.00
No. 1 Mixed (Colored)	55.00 to 65.00
Manilas—	
New Env. Cuttings	100.00 to 110.00
New Env. Cuts, One-Cut	—
Extra Manilas	55.00 to 60.00
Manila Tab Cards, Free of Ground Wood	110.00 to 120.00
Colored Manila Tab Cards	65.00 to 70.00
Kraft—	
New Envelope Cuttings	105.00 to 115.00
Trimmed Sorted No. 1 100%	65.00 to 70.00
No. 1 Old Assorted	45.00 to 50.00
News—	
White Blank	80.00 to 85.00
Overissue	32.00 to 34.00
No. 1 Folded	28.00 to 30.00
Old Corrugated Containers	34.00 to 36.00
New Jute Corrugated Cuts	33.00 to 35.00
Mill Wrappers	25.00 to 26.00
Box Board Chips	23.00 to 24.00
No. 1 Mixed Paper	23.00 to 24.00

CHEMICALS

f.o.b. shipping point

Alum (Papermakers)—	
Lump, cwt.	4.05—
Ground, cwt.	3.80—
Powdered, cwt.	4.20—
Blanc Fixe—	
Pulp, bulk, ton	80.00—
Dry, barrels	85.00—
Bleaching Powder—	
Drums, cwt.	5.00 to 6.00
Casein (Domestic Standard)	
20-30 mesh (bags), lb.	
80-100 mesh (bags), lb.	39.00 to 40.00
Argentine, lb.	34.50 to 35.50
China Clay—	
Domestic Filler Bulk (mine) ton	10.00 to 15.00
Domestic Coating Bulk (mine) ton	15.00 to 25.00
Imported (ship side) Bulk (lump) ton	22.00 to 30.00
Chlorine—	
Tank cars (wks) cwt.	2.80 to 3.05
Gelatine (silicin), lb.	1.25 to 1.35
Glyc. (C.P.) drums, lb.	.29¼ to .29¾
Litharge, powd. bbl. lb.	.17¾ to .18¾
Rosin (Gum)—	New York, per 100 lbs.
E	8.05—
F	8.25—
G	8.25—
WW	8.60—
Rosin (Wood), carlots, F.O.B. South	5.90—

MARKET QUOTATIONS

Salt Cake—
Dom. bulk (wks) ton..... 22.00 to 24.00
Imp. bulks on dock—
(Atl. ports) ton (Nom.) 35.00—

Soda Ash—
Bulk (works) cwt..... 1.20—
Paper Bags, cwt..... 1.50—

Soda (Caustic)—
Solid drums, cwt..... 3.35 to 3.40
Ground and flake, drums, cwt. ..... 3.75 to 3.85

Sodium Silicate—
60 deg. 55 gal. drums, (works) cwt..... 1.35 to 1.45
40 deg. 35 gal. drums, (works), cwt. ..... 1.05 to 1.20

Starch—
Pearl, 140 lb. bags, cwt... 5.47—
Pearl, barrels, cwt..... 5.47—
Paper, (8p.) bags, cwt..... 5.47—
Powdered, barrels, cwt..... 5.58—

Sulphur (Crude)
(Mine) bulk, long ton..... 22.00—

Talc—
Dom. 100 lb. bags (mine) ton ..... 25.00 to 28.00
Canadian ..... 35.00 to 45.00

Titanium Dioxide—
Barium Pig. bbls., lb..... .19½ to .21½
Calcium Pig. bbls., lb..... .19½ to .21½

Zinc Sulphide, bbls., lb. ..... 11.50 to 11.75

WOOD PULP

Prices, dollars per short, air dry, ton, with inland freight allowed, are:

Bleached sulphite, Swed. 160.00—
Bleached sulphite, Finnish —
Bleached sulphite, dom.....128.00 to 135.00
Easy bleaching sulphite.... —
Unbleached kraft, Finn..... —
Unbleached sulphite, Swed..138.00 to 160.00
Bleached sulphite, Fin... —
Unbleached sulphite, dom...117.00—
Unbleached kraft, Swedish 138.00 to 160.00
Unbleached kraft, northern 110.00 to 120.00
Unbleached kraft, southern 115.00—
Bleached sulphate, Swedish 160.00—
Bleached soda, domestic....130.00—
Sulphite screenings, dom.... 40.00 to 50.00
Groundwood, domestic and Canadian ..... 70.00 to 72.50

PAPER

f.o.b. New York City

Boards—	per ton
Binders	125.00—
Chip	97.50—
Chip, tube and can	102.50—
Chip, full blending	105.00—
Chip, sgl. mla. lined	115.00—
Coated, white patent .016	145.00—
.020 and heavier	135.00—
Kraft liner	115.00—
Filled News	100.00—
Container	115.00—

Book Papers—f.o.b. mill with quantity, weight, manufacturing and other differentials allowed:

(Per cwt. in ton lots)
Uncoated (Untrimmed)

Book, White (M. F.)—	
A Grade E. F.	16.15—
B Grade E.F.	15.40—
A Grade S. C.	16.65—
B Grade S. C.	16.15—
No. 2 Uncoated Offset 4 sides, White	—
Machine Coated White	
No. 1 Glossy	21.65—
No. 2 Glossy	20.40—
No. 3 Glossy	19.65—
No. 4 Glossy	—
No. 2 Offset	16.90—
CIS Litho (Varnish)	—
CIS Litho (Non-Varnish)	—

Writing Papers—f.o.b. mill with zone, quantity, packing and other differentials allowed:

Rag Content Bond—
(In Ton Lots)

	per cwt.
Extra 100% Rag	64.55—
100% Rag	56.95—
75% Rag	43.70—
50% Rag	35.60—
25% Rag	29.75—

Rag Content Ledger—
(In Ton Lots)

	per cwt.
Extra 100% Rag	66.35—
100% Rag	58.20—
75% Rag	44.95—
50% Rag	36.95—
25% Rag	31.00—

Sulphite Bond—

	per cwt.
Air dry, watermarked	—
No. 1 watermarked	18.20—
No. 2 watermarked	17.25—
No. 4 watermarked	16.25—

Sulphite Ledger—

	per cwt.
No. 1 watermarked	20.30—
No. 2 watermarked	20.15—
No. 4 watermarked	19.60—

Glassine (f.o.b. mill)—

	per cwt.
Embossed (25 lb. up)	—
Bleached (25 lb. up)	—
Unbleached (25 lb. up)	—
Greaseproof—	
Bleached (25 lb. up)	—
Unbleached (25 lb. up)	—

News—

	per ton
Rolls, Standard (Contract)	100.00 to 110.00
Rolls (Spot)	(Nominal)
Sheets	120.00—

Tissues (Carlots)—

	per ream
White No. 1—	1.60—
White No. 2	1.45—
Bleached Anti-Tarnish	—
Colored	—
Anti-Tarnish Kraft	1.50—
Manila	1.65—
Napkins, semi-crepe (12¼ lb. to M shts.) per cs.	.80—
Napkins, full crepe and emb'sed (12¼ lb. to M shts.) per cs.	.90—
Toilet, Bleached (M. shts.) per cs.	7.10—
Toilet, Unbleached (M shts.) per cs.	5.90—

Towels—

	per case
Bleached	6.65—
Unbleached	5.65—

Wrappings (Kraft)—

	per cwt.
Super-Standard	8.75 to 9.00
No. 1 Wrapping	7.75 to 8.00
Standard Wrapping	7.00 to 7.25
Standard Bag	6.75 to 7.00
Variety Bag	—

Wrappings (Sulphite and Bleached Kraft)—
(Rolls, f.o.b. mill)

Bleached Papers—	per cwt.
M.F. & M.G. Waxing, 20 lb. (Carloads only)	—
(10,000 lb.)	—
Drug wrapp., 35 lb.	—
Unbleached Papers—	
Com. Gr. Butch. 40 lb.	—
No. 1 Butchers	—
No. 1 Imit. Parch. & Dry Fin. Groc. Sulphite, 30 lb.	—
No. 2 Imit. Parch. & Dry Fin. Groc. Sulphite, 30 lb.	—
Steam Finish, 50 lb.	—
Water Finish, 50 lb.	—
Manilas—	
Envp. Mla., Sub. 16-40 (No. 1)	—
Envp. Mla., Sub. 16-28 (No. 2)	—
Envp. Mla. (Prices based on large sheets untrim'd ream marked, in bdls.)	—

Wrapp Mla. 35 lb. up—	
No. 1	9.00—
No. 2	—
M.G. Sulphite and Kraft (other than Waxing)	
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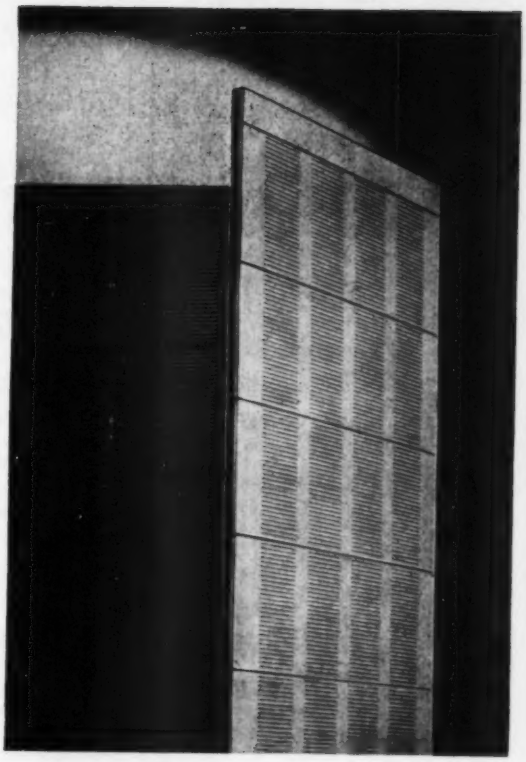
Grade A-32 lb.	—



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(2) **Longer Life** — Slots remain sharp, side walls highly polished for the life of the plate. There's greatly improved corrosion resistance.

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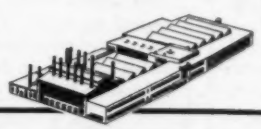

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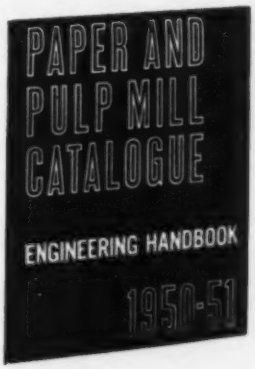

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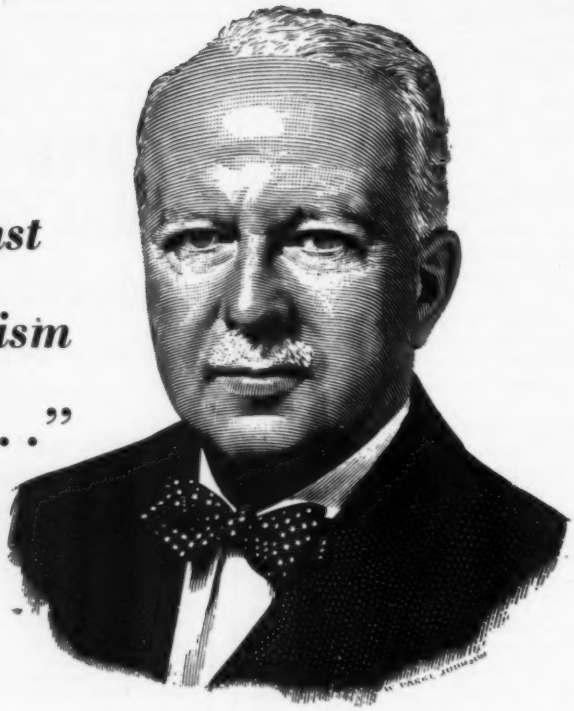

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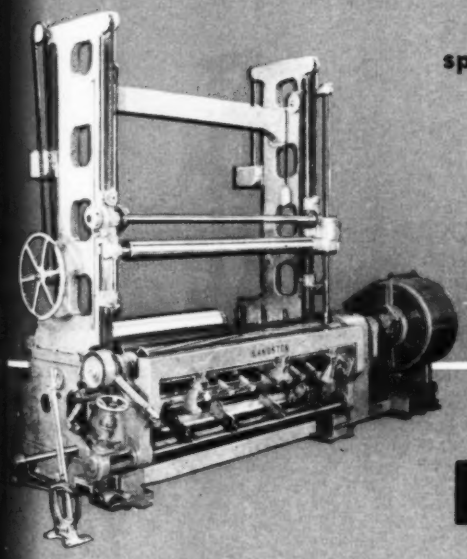

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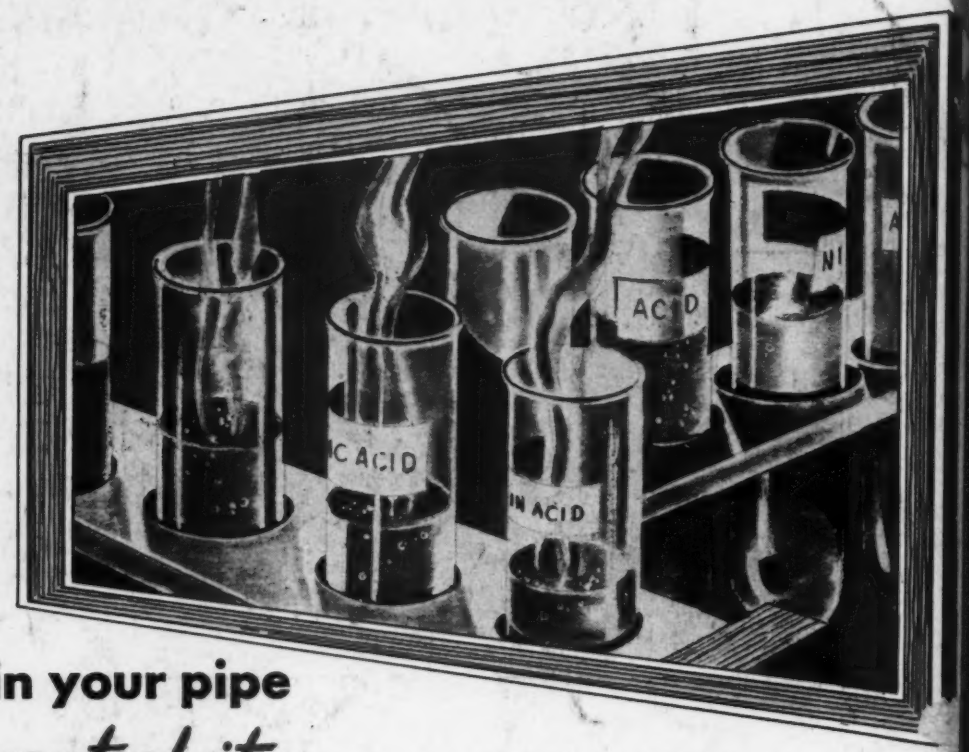

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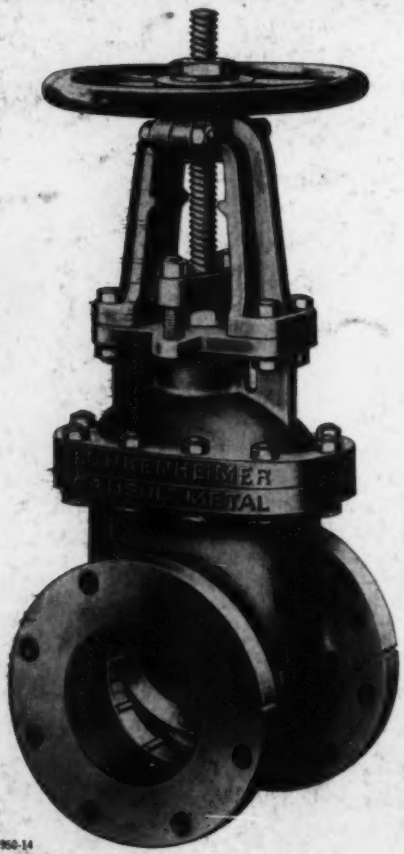

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